Spokane Area Higher Education Services Study
Substitute Senate Bill 6655

January 1999

EXECUTIVE SUMMARY

BACKGROUND

Substitute Senate Bill 6655 directs the Higher Education Coordinating Board (HECB), Eastern Washington University (EWU), and Washington State University (WSU) to examine fully how the state can best use its public investment in higher education in eastern Washington and the Spokane area and continue to provide the highest quality education for students. This legislation directs responsibilities to the HECB, EWU, and WSU for refocusing public higher education in the greater Spokane area.

The HECB completed its preliminary higher education and economic assessments in September. The disposition of the Spokane Center is yet to be determined. Final reports from EWU and WSU on the plans for redefining and refocusing their missions and operations were delivered to the HECB in October for Board review, evaluation, and approval.

RECOMMENDATIONS

1. **Conditional approval is recommended for both WSU and EWU plans,** pending the April 1, 1999, completion of the EWU comprehensive program review of its Spokane program offerings.

2. **Conditional approval is recommended for Eastern Washington University's "Mission and Operating Plan" submitted October 15, 1998.** The approval is conditioned upon EWU's completion of a review of its Spokane program offerings by April1 1, 1999.

3. **Conditional approval is recommended for Washington State University's "Planning for Higher Education in Spokane" submitted October 15, 1998.** The due date for a final plan will be June 1, 1999. The final plan should include:

a) a Riverpoint-specific mission statement that emphasizes the provision of graduate and research programs and reflects WSU Spokane's aspirations to become a destination campus for various areas of study;
b) program delivery plans that include predominantly on-site instruction;
c) re-evaluation of the proposed Executive Development Center;
d) continued development of the Health Sciences Consortium's organization and operating guidelines for implementation of core services and multi-institutional programs of study.

Furthermore, it is recommended that by June 1, 1999, WSU, in collaboration with the other higher education institutions in the Spokane area, complete a market analysis/education needs assessment, to determine how WSU Spokane can help meet the demand for higher education statewide, as well as in the immediate Spokane area. Furthermore, by June 1, 1999, it is also recommended that WSU submit a final management plan for the Riverpoint campus that incorporates

relevant findings from the additional assessments (described above), and final information about EWU Spokane programs. Finally, it is recommended that WSU submit full proposals for those degree programs proposed in its plan for HECB consideration.

4. **HECB will submit a plan for the disposition of the Spokane Center on June 1, 1999, allowing consideration of the findings of EWU's report of April 1, 1999.** The plan will be based upon an evaluation of fiscal capacity at state higher education facilities in Cheney and Spokane.

Spokane Area Higher Education Services Study
Substitute Senate Bill 6655

December 1998

BACKGROUND

Governor Gary Locke directed the Higher Education Coordinating Board (HECB) to examine fully how the state can best use its public investment in higher education in eastern Washington and the Spokane area and continue to provide the highest quality education for students. The Board met in the Spokane area in January and February 1998, and reported back to Governor Locke on February 15, 1998, with preliminary findings and recommendations. Substitute Senate Bill 6655 was enacted in the 1998 Legislative Session, and signed by Governor Locke on April 3, 1998.

This legislation directs responsibilities to the Higher Education Coordinating Board, Eastern Washington University (EWU), and Washington State University (WSU) for refocusing public higher education in the greater Spokane area. Specifically, SSB6655 directed that:

- The **Spokane branch campus of Washington State University** be located at the Riverpoint Higher Education Park, and that WSU be the fiscal agent of the Riverpoint Park.

- **Eastern Washington University** may serve students at the Riverpoint Park, but the bill states that the residential mission of EWU in Cheney should be strengthened, with a focus on the excellence of its primary Cheney campus.

- The **Higher Education Coordinating Board** shall manage an assessment that determines the current higher education resources of the greater Spokane area and the current and future capital and programmatic higher education needs of the Spokane area, including the balance among anticipated, unmet, and fully met higher education needs. This assessment shall be coordinated with an economic analysis of the greater Spokane area.

The HECB completed its preliminary higher education and economic assessments in September. Findings of those reports are summarized later in this report. Final reports from WSU and EWU on the plans for redefining and refocusing their missions and operations were delivered to the Higher Education Coordinating Board on October 15, 1998, for review and approval.

The following report reviews preliminary assessments of higher education services and needs in the Spokane area, reviews the specific plans submitted by the two institutions, and provides future direction for continued development in the Spokane area. Recommendations are presented in four areas:

Part I: Recommendations for EWU
Part II: Recommendations for WSU
Part III: Recommendations for WSU Management Plan
Part IV: Recommendations on the Disposition of the Spokane Center

WSU and EWU are commended for their work in developing their plans. Both institutions completed a substantial amount of work in a relatively short time. While significant additional tasks remain, the two universities have made impressive progress this year.

Summary Recommendation. Conditional approval is recommended for both WSU and EWU plans, pending the April 1, 1999, completion of the EWU comprehensive program review. This date will allow for continued refinement to both institutions' plans, and for an analysis of future needs in the Spokane area that relate to regional and statewide interests.

PRELIMINARY FINDINGS

Higher Education Services Currently Available in Spokane:

At the September 1998, meeting of the Higher Education Coordinating Board, an inventory / summary was presented of enrollment and degrees granted at WSU Spokane, EWU, the community colleges (Spokane Community College and Spokane Falls Community College), and two independent institutions (Whitworth College and Gonzaga University).

The inventory shows that 30,000 people are enrolled at the various institutions of higher education in Spokane County. Most are enrolled at the undergraduate level; about half of the enrollment occurs at the two community colleges (Spokane and Spokane Falls). In terms of degrees granted, about 4,000 bachelors and masters degrees are awarded by the four-year institutions. EWU awards half of the degrees; Whitworth and Gonzaga account for about one-quarter of degrees granted each year. Community colleges confer about 1,800 associate degrees, plus additional certificates. In order to determine the types of programs available in Spokane, enrollment and degree data were analyzed by 12 major categories or fields of study. It is noteworthy that nearly all fields showed significant numbers of students enrolled, as well as degrees awarded in all fields. (Source: *Higher Education Needs Assessment, HECB, September 25, 1998*.)

One gauge of higher education availability is the participation rate of residents from a particular area. Spokane County has a relatively high proportion of its citizens who are enrolled in higher education. For example, among the 39 counties, Spokane ranks seventh in participation at public four-year institutions in the state. Although this figure includes attendance at any institution (UW, CWU, etc.), reports from both Washington State and Eastern indicate that a large proportion of their enrollment is made up of residents within the Spokane area. (Source: *Higher Education Enrollment Statistics and Projections 1997-99 Biennium, OFM, February 1997*).

Public Opinion Survey of Higher Education in the Spokane Area:

HECB's analysis also involved a sample survey of Spokane area residents' perceptions of the availability of higher education in Spokane, as well as any plans they might have to enroll in a college or university. Most respondents to the survey (97 percent) rated the quality of higher education as high. Eleven (11) percent were currently enrolled, while another 64 percent reported that someone in their household was likely to enroll in the next five years. When asked about

potential fields of study, business, education and health accounted for half of the responses. (Source: *Higher Education Needs Assessment, HECB, September 25, 1998.)*

Economic Assessment:
A third aspect of HECB's Spokane study involved an economic analysis of the area. The report notes that in the Spokane area, 33 to 45 percent of new workers will need at least some college education, and continuing education will be required to stay current or change occupations. The report notes that "more emphasis on higher education is likely to be required to support the staffing needs of firms operating in the Spokane area. Either local higher education services will need to expand, or firms will increasingly find it necessary to recruit from other regions." Two fields were identified as major growth areas: health care and high tech manufacturing. (Source: *"The Future of the Spokane Economy: Implications for Higher Education," Northwest Policy Center, September 25, 1998.)*

A comparison of the economic assessment with the inventory of current higher education services is instructive. Although residents of the Spokane area already enroll in higher education at a rate exceeding many other parts of the state, *the question for Spokane is, what programs could be offered at Riverpoint, that are not already being offered in the greater Spokane area, that would help the state meet its objective of serving growing demand for higher education, particularly at the upper-division and graduate levels?*

The economic assessment, for example, asserts that more health care training is needed. Although the health field is well represented in programs currently offered in Spokane, the assessment appears to corroborate proposals for a health sciences consortium, which would consolidate existing educational opportunities, and expand into additional specializations. This kind of collaborative arrangement could better utilize the state's considerable investment in Spokane (including the proposed Health Sciences Building) and provide skill training for emerging market requirements.

The discussion in the following sections refers to the plans submitted by EWU and WSU on October 15, 1998.

PART I: RECOMMENDATIONS FOR EASTERN WASHINGTON UNIVERSITY

Overview of EWU Plan:
As directed by SSB 6655, Eastern Washington University submitted a mission statement and operations plan on October 15, 1998. The plan includes the following:

- A mission statement is promulgated with the principles for a "comprehensive, Cheney-based public institution of higher education," as noted in the legislation (SSB 6655).
- The university will "go beyond the specific requirements of the legislation to begin a re-examination of the overall direction and operations of the institution……the process will lead to examination of the organization's structure of the university and a full review of its academic programming."
- The primary student audience is identified:
  - 75 percent from eastern Washington;
  - 50 percent live in Spokane, 33 percent live in Cheney;
  - 19 percent are from western Washington or out of state;
  - Many are transfers;

  - 60 percent are traditional college age;
  - Many receive financial aid.
- Admission standards are reviewed and deemed appropriate.
- Enrollment projections are targeted toward steady increases in the next five years; strategies to achieve goals are reviewed.
- Instructional capacity will be utilized more at both Cheney and Spokane locations.
- Finances: Eastern seeks an extension of the enrollment-funding proviso through the next biennium.
- Location: EWU commits to a range of programs and services on the Cheney campus.
- Spokane programs will include physical therapy, communication disorders, dental hygiene, nursing, and occupational therapy (pending HECB approval).
- Spokane programming: EWU proposes to review its current Spokane programming by April 1, 1999, and report at that time to HECB.
- The business program on the Cheney campus will be strengthened.
- Realizing the mission: EWU will
  - Complete an academic program review of all programs by April 1, 1999.
  - Reorganize administrative structure; develop new budgeting; continue regional and statewide recruiting; develop links with area organizations; and develop distance education and off-campus programming.

RECOMMENDATIONS FOR EWU:

Conditional approval is recommended for Eastern Washington University's "Mission and Operating Plan" submitted October 15, 1998. The approval is conditional upon EWU's completion of a review of all academic programs by April 1, 1999. This review, originally due October 15, 1998, is intended to determine what programs currently located in Spokane "…should be returned to the Cheney campus, discontinued, or continued to be offered in Spokane because of documented demand, unique partnerships, demonstrated efficiency, and other considerations" (SSB 6655). EWU has requested an extension of that due date in order to complete a more comprehensive review of programs and courses in Spokane as well as Cheney.

Until EWU completes this program review, it is not possible to determine the appropriate disposition of the Spokane Center building, or the appropriate number, disciplines, and distribution of Riverpoint course offerings.

Most elements of the EWU plan are acceptable as presented. The mission statement focuses on the comprehensive nature of the Cheney-based university. Since the intent of the legislation and the HECB guidelines is to focus EWU's role as a comprehensive institution based in Cheney, EWU is to be commended for proposing to engage in a process of reviewing and analyzing its program offerings.

The additional effort and time needed to complete the review will help to fulfill part of HECB's guidelines for the review and restructuring of higher education services in the greater Spokane area: specifically that EWU ensure that "every effort is made to protect the academic interests of, and minimize adverse impacts on Eastern Washington University students."

Guidelines for EWU's final program plan:

For the final report of April 1, 1999, HECB understands that a review will be completed of all programs offered by EWU at the main campus and at locations in Spokane. The following elements related to **instruction** should be included as part of the plan:

- An analysis of Spokane-based program offerings that will be returned to Cheney, discontinued, or continued to be offered in Spokane because of documented demand, unique partnerships, and demonstrated efficiency;
- An overview of contemplated degree programs at Eastern Washington University in future years, both at the main campus and in Spokane; and
- A discussion of centers of excellence proposed for the EWU main campus.

PART II: RECOMMENDATIONS FOR WASHINGTON STATE UNIVERSITY

Overview of WSU Plan:

As directed by SSB 6655, Washington State University submitted a mission statement and operations plan on October 15, 1998. The plan includes the following:

- The economic and cultural context of the Spokane area.
- The rationale for partnerships, such as the Health Sciences Consortium.
- An abbreviated mission statement with core areas of focus, as follows:
  - Health Sciences
  - Interdisciplinary Design Institute
  - Engineering and Technology
  - Business
  - Education
  - Agriculture
  - Academic support including Honors College, Library, Information Technology, and Outreach
  - Research Collaboration with SIRTI
  - International Programs
- Plan for relocation of all programs to Riverpoint
- An organizational and governance plan, plus overall financial requirements, for the Health Sciences Consortium
- Discussions of :
  - Continuation of EWU programs in Spokane
  - Primary and non-primary student audience
  - Admissions standards
  - Projected enrollment levels and concomitant financial requirements
  - Capital and capacity considerations

HECB RECOMMENDATIONS FOR WSU:

Conditional approval is recommended for Washington State University's "Planning for Higher Education in Spokane" submitted October 15, 1998. The due date for a final plan will be June 1, 1999. Furthermore, it is recommended that WSU submit full proposals for those programs proposed in its plan for HECB consideration.

There are many positive aspects of the plan, and it is generally acceptable. Furthermore, the initial steps taken toward collaboration with other institutions and with community groups appear to be positive. However, HECB finds that the following areas merit additional attention.

FURTHER MARKET ANALYSIS / EDUCATION NEEDS ASSESSMENT

- *Specific employment / training needs in the Spokane area, possibly combined with an examination of specific areas of interest for current and future students*. This work would build on the initial assessment by HECB of economic trends and the current availability of higher education services in the Spokane area; and
- *An analysis of education needs that would identify courses and programs to serve a broader student market than that which exists in the greater Spokane area.* WSU has identified its vision for WSU Spokane as a destination or "magnet" for education services in a larger market.

Specifically, WSU is requested to conduct additional analyses that would result in an overall prospectus of how WSU Spokane can help meet the demand for higher education statewide, as well as in the immediate Spokane area. The analysis should include the following components:

1) **Spokane-area employer survey** of employees' education and training needs;
2) **Spokane-area survey of potential students' course and program interests**; and
3) **Identification of emerging or unmet needs for education and training in Washington state,** which is not duplicative of EWU undergraduate programs and which, if accommodated at Riverpoint, would attract students from across the state. This assessment should include analysis of existing research (e.g. *NSIS I Needs Assessment; Postsecondary Education Needs of Okanogan and Jefferson Counties*), as well as new research and assessments.

HECB proposal to fund further needs analyses: To aid in analyzing future education and training needs, HECB will provide funding to WSU to conduct additional research. To access funds, WSU should submit a short proposal developed in cooperation with the other Spokane-area higher education institutions, outlining an assessment process, and overview of the anticipated product, and an estimated dollar amount required to complete the work. Upon approval of the proposal, HECB would transmit funds to WSU. The due date for a final report to HECB would be June 1, 1999.

HECB anticipates the following would be the types of factors, activities, and analyses to be included in the proposal:

- **Collaboration with other public and independent higher education** institutions in the Spokane area, and with **community and business enterprises in the Spokane area**. HECB notes the recent establishment of a "Higher Education Leadership Group" under the auspices of the Spokane Area Chamber of Commerce. This Group appears to be a promising vehicle for promoting coordination and partnerships among business, community and higher education endeavors. Among its goals is the evaluation of economic opportunities and educational programs – which is congruent with the type of proposal described here.
- **Original research activities** such as surveys of employers / businesses / industries / service providers in the Spokane area; surveys of potential students – particularly those intending to pursue higher education in the future. This may involve not only the Spokane area, but possibly a larger portion of the state's population.
- **Independent researcher.** HECB recommends that an outside consultant or group be chosen to conduct the study. Specifically, a researcher should be chosen who is not affiliated with an institution of higher education located in the Spokane area.

Additionally, because EWU has asked for an extension of its program review until April 1, 1999, EWU's work will coincide with the analyses proposed here. Therefore, WSU is encouraged to work

closely with EWU during the next few months, communicating to EWU any preliminary results that could assist EWU in its planning. Further, WSU should consider the April 1, 1999, results of EWU's program review when WSU's final report is assembled.

The final report should reiterate those programs already proposed for WSU Spokane and identify what new programs, if any, are needed, and what programs/coursework could be redirected. The report should discuss the collaborative and specialized functions envisioned for the various higher education entities in Spokane, and explore WSU Spokane's potential contributions toward the needs of the state / region in connection with its mission of becoming a destination campus.

Finally, based on the findings of this "market research," the report should include a proposal for site-based centers of excellence at WSU Spokane.

REFINEMENT OF MISSION STATEMENT

- **Riverpoint-specific Mission Statement.**

The mission statement for WSU Spokane should be revised to reflect more specifically the unique mission of the campus, which will become the primary provider of graduate and research programs, along with its continued role in providing upper-division coursework for selected degree programs. Furthermore, WSU Spokane's mission statement should reflect its aspirations to become a destination, or "magnet," for various areas of study / excellence.

- **Make on-site Instruction a Clear Priority.**

As WSU continues to review plans for Spokane, HECB requests further analysis of plans with the goal of maximizing site-based programs as the major delivery mode. To date, several WSU programs offered or proposed for Spokane would rely on distance-education delivery to a large extent. These programs include Engineering, a Master of Technology Management, and a BA in Agriculture. WSU's proposed BS in Computer Engineering, BA in Business Administration/Real Estate, BA in Business Administration/Risk Management, and BA in Hotel and Restaurant Administration also would rely on distance-education delivery, though to a lesser extent.

However, based on the text of SSB 6655, and ongoing dialogue among the Legislature, the HECB, and the community of Spokane, the intent is for site-based instruction to characterize higher education services at the Riverpoint Higher Education Park. Therefore, HECB recommends that program delivery plans for WSU Spokane include predominately on-site instruction.

- **Executive Development Center**

HECB requests re-examination of whether the proposed "executive development center" and the intention to offer certificate programs in international business are consistent with the graduate and research focus of WSU Spokane. WSU should also reconsider whether other institutions are already positioned to offer or in fact do offer certificate programs in international business already.

- **Health Sciences Consortium**

WSU's initial discussion of the consortium, in the plan of October 15, 1998, envisions a highly collaborative enterprise, as evidenced by the organization chart and the discussion of health science activities currently underway at the various institutions. As of that date, two meetings had been held with all participants in the Consortium and numerous meetings have been held with sub-groups of the

Consortium. In the final plan, HECB requests more elaboration of the consortium's organization and operating guidelines for implementation of core services and multi-institutional programs of study.

PART III: WSU MANAGEMENT PLAN FOR THE RIVERPOINT HIGHER EDUCATION PARK:

SSB 6655 requires that a management plan for Riverpoint be submitted by December 1, 1998. This plan should be based, at least in part, on a completed needs assessment of the Spokane area.

HECB Recommendations for WSU Management Plan:

- Preliminary approval of the WSU management plan, submitted December 1, 1998.
- A final WSU Management Plan, due June 1, 1999, which will incorporate relevant findings from additional higher education needs assessments (described above), and information about EWU Spokane programs, which should be reflected in Eastern's April 1, 1999, program review report.

PART IV: RECOMMENDATIONS FOR THE DISPOSITION OF THE SPOKANE CENTER

SSB 6655 directs the HECB to develop a plan for disposition of the Spokane Center by December 1, 1998. However two factors support setting a later report due date.

First, it is not possible to know the extent to which space in the Spokane Center will be needed until EWU has completed an analysis of which programs will be retained in Spokane. While SSB 6655 directed that such a review be completed by October 15, 1998, EWU has requested that date be extended until April 1, 1999, in order to allow a more thorough examination of courses/programs offered both in Spokane and Cheney. Second, a thorough analysis of space and functional requirements of EWU program offerings is needed prior to making a determination about the disposition of the Center.

Therefore, HECB will submit a plan for the Disposition of the Spokane Center on June 1, 1999, allowing consideration of the findings of EWU's report of April 1, 1999. The plan will be based upon an evaluation of physical capacity at state higher education facilities in Cheney and Spokane.

In consideration of the EWU program review described above, the WSU program proposals and the additional needs and analyses, HECB shall evaluate opportunities to make maximum use of existing **physical capacity at the Cheney campus and Spokane facilities**. This evaluation should include an analysis of the full capital and operating costs associated with any recommendations to (1) relocate programs to the Cheney campus and (2) continue program offerings in Spokane.

This analysis should include the following components:

1. A determination of the costs and benefits of consolidating Spokane-based programs at the Riverpoint campus and the consequent appropriate disposition of the Spokane Center Building.
2. An assessment of the functional condition of existing facilities at the Cheney campus and the opportunities and associated cost of fully utilizing existing excess capacity. This analysis will be long-term, and involve extensive study by HECB.

Spokane Area Higher Education Services Study: Higher Education Needs Assessment

September 1998

BACKGROUND: In December 1997, Governor Gary Locke directed the Higher Education Coordinating Board (HECB) to examine fully how the state can best use its public investment in higher education in eastern Washington and the Spokane area and continue to provide the highest quality education for students. The Board met in the Spokane area in January and February 1998, and reported back to Governor Locke on February 15, 1998 with preliminary findings and recommendations.

The Board's preliminary report to the Governor in February included a recommendation for a higher education needs assessment, to determine what additional or different higher education services might be needed in the greater Spokane area. The need for this assessment was reiterated in Substitute Senate Bill 6655, enacted in the 1998 legislative session, and signed by Governor Locke on April 3, 1998. The HECB guidelines regarding the development of academic programs by EWU and WSU called for in SSB 6655, direct EWU and WSU to incorporate in their plans the findings of the higher education needs assessment.

HECB Higher Education Needs Assessment Components

The assessment of higher education needs in Spokane was effected in two parts:

- **Part I:** An inventory of Spokane higher education programs available to determine the *general* scope of higher education offerings available to people in the greater Spokane area.

- **Part II:** A survey of residents of the greater Spokane area to determine what postsecondary services people anticipated needing or wanting in the next five years.

PART I: SPOKANE HIGHER EDUCATION INVENTORY

Inventory Overview

This report focuses on a review of higher education currently offered in the Spokane area. Data have been compiled from the various institutions, both public and independent, regarding enrollment in fields of study as well as degrees granted. A concurrent aspect of the Board's work involves a survey of Spokane residents to determine their anticipated interest and need for higher education. This survey is reviewed in another section of this study.

The following institutions are located in the Spokane area, and have been included in the data and analyses in this report:

- Eastern Washington University (the main campus at Cheney and Spokane facilities)

- Washington State University Spokane
- Gonzaga University
- Whitworth College
- City University, Spokane center
- Spokane Community College
- Spokane Falls Community College

The initial inventory presented here draws upon available data related to degrees earned by students in Spokane-area colleges and universities, and enrollment levels at these institutions. Data sources include Integrated Postsecondary Education Data System (IPEDS), an annual survey conducted by the federal Department of Education, and the Higher Education Enrollment Report (HEER), produced by this state's Office of Financial Management (OFM). Where relevant, additional information has been provided by the institutions.

Enrollment by program, shown in *Appendix A*, includes HEER enrollment data for fall 1991, fall 1993, and fall 1996 for the public baccalaureate institutions, EWU and WSU Spokane. Similar information was requested from the private/independent institutions. These data are provided for 12 fields of study based on summaries of program-level data. For the two community colleges in Spokane, data are displayed in four categories related to "purpose for attending."

Appendix B contains data on degrees granted (data source: IPEDS), using the same 12 fields of study. In this case, data are shown at three points (1986-87, 1991-92, and 1996-97) during the last ten years for public and independent baccalaureate institutions. For the two community colleges, associate's degree data are included, as well as numbers of certificates awarded.

The observations and discussions in this report are based on categorizing degrees and enrollment into 12 fields. Therefore, information is generalized; some "fields" contain several programs for which only aggregated analysis is possible. The table in *Appendix C* contains more detail on types of programs included in each field.

Inventory Summary

A variety of institutions – public and independent, two-year and four-year – offer a broad range of higher education services in the Spokane area, providing potential students a significant array of choices when considering enrolling at a college or university, especially at the undergraduate level. At the graduate level, the breadth of offerings is relatively extensive, particularly for students who wish to pursue a master's degree. All of the baccalaureate institutions offer master's degrees; some have limited offerings while others such as EWU have nearly all fields of study represented. Doctoral programs, which HECB policy generally limits to the main campuses of public research institutions, are few in Spokane, limited only to professional and not research-based programs.

Nearly 30,000 people in the Spokane area are enrolled currently in higher education coursework. This enrollment includes undergraduate and graduate students, full- and part-time, at both public and independent institutions in the county. The two community colleges account for half of this total enrollment; while half are found at baccalaureate institutions (including WSU Spokane, EWU, Gonzaga, Whitworth, and City University).

The largest proportion of the entire enrollment is at the undergraduate level. At the baccalaureate institutions, 11,500 students are registered in the category freshmen through seniors. Therefore, the total undergraduate population equals 26,500 (including 15,000 at the community colleges), which is 91 percent of all Spokane area students.

Undergraduate Experiences

Undergraduate students choose a variety of fields as majors. When categorized into 12 general fields, enrollments at the **baccalaureate institutions** are seen in all fields at the undergraduate level (see Appendix A). This is true in spite of the large proportion — one-fourth to one-third — who are "undecided," especially early in their college experiences. The highest numbers of majors are found in education, and arts and letters. The latter is a broad category including communications, languages, English, literature, and arts. Other fields with significant enrollments include business, social sciences, and health.

The culmination of a typical undergraduate experience is the bachelor's degree. In 1996-97, nearly 2,800 were awarded to students at Spokane colleges and universities. Again, the chosen majors cover all fields, with the highest numbers of degrees in arts and letters, social sciences, business, education, and health. The number of students receiving bachelor's degrees each year is nearly 25 percent of the ongoing enrollment at baccalaureate institutions; this would indicate that a healthy proportion of students follow through to reach their final year of study and, in fact, graduate.

The community colleges offer academic coursework that will transfer to a baccalaureate institution where students can complete bachelor's degrees. In addition, a variety of classes at community colleges concentrate on skill development related to specific occupations.

Although not all community college students pursue an associate's degree as a goal, the number awarded each year has increased. In 1996-97, 1800 associate degrees were conferred in the Spokane area.

Graduate / Professional Experiences

Only about 9 percent of enrollment in the Spokane area occurs at the graduate and professional level. In fall 1996, there were 2,800 students engaged in education beyond the bachelor's degree.

The largest numbers of graduate students are pursuing master's degrees. In 1996-97, about 800 were conferred, with majors in most of the general fields of study. The highest concentration of master's degrees was found in education; about half were awarded in this field. Other fields with significant numbers of degrees included business, social sciences, health, and arts and letters. Doctoral degrees are offered only in Education, with about 20 conferred each year.

The numbers of first-professional degrees are significant in Spokane – specifically due to the law school at Gonzaga University. More recently, WSU Spokane has begun offering a professional degree in pharmacy.

Enrollment: Overall, almost 30,000 students are enrolled currently in Spokane-area colleges, both public and independent. This enrollment includes full-time and part-time students at both the undergraduate and graduate levels. Half of the total enrollment occurs at the two community colleges.

The **total number of undergraduate students** enrolled in the institutions included in this study **showed little change between 1991 and 1996**. The number of undergraduates enrolled in business declined steadily between 1991 and 1996, while those enrolled in arts and letters, education, and social sciences increased during that time. Interestingly, the percentage of undergraduates enrolled who were undecided about their major or field of study declined from 41 percent in 1991 to 30 percent in 1996. This decline may reflect a number of factors including improved academic counseling opportunities, student perceptions of limited access to certain majors or degree programs, or the adoption of institution-wide strategies to reduce the time-to-degree and improve graduation rates.

Total graduate and professional enrollment increased by more than 200 students between 1991 and 1993, but decreased by about the same amount between 1993 and 1996. Enrollment in health fields of study showed a steady increase between 1991 and 1996 at the graduate and professional level.

Degrees Granted

Total bachelor's degrees granted between 1986-87 and 1996-97 increased steadily from 2,129 to 2,796. Bachelor's degrees in business decreased from 562 to 441 during this same period. Education and arts and letters bachelor's degrees awarded have decreased between 1991-92 and 1996-97.

The production of master's degrees increased dramatically between 1986-87 (472) and 1996-97 (811). Business and the social sciences degree production showed steady increase during this time. Master's degrees awarded in education increased significantly between 1986-87 and 1991-92 as a result of legislation requiring teachers to have a postbaccalaureate degree. It dropped significantly between 1991-92 and 1996-97 when the Legislature rescinded the legislation.

Annually, nearly 4,000 degrees – mainly bachelor's and master's – are awarded at the baccalaureate institutions. In addition, community colleges confer 1,800 associate's degrees plus additional certificates.

SPOKANE AREA STUDIES: HIGHER EDUCATION NEEDS ASSESSMENT

Enrollment Data: 1996

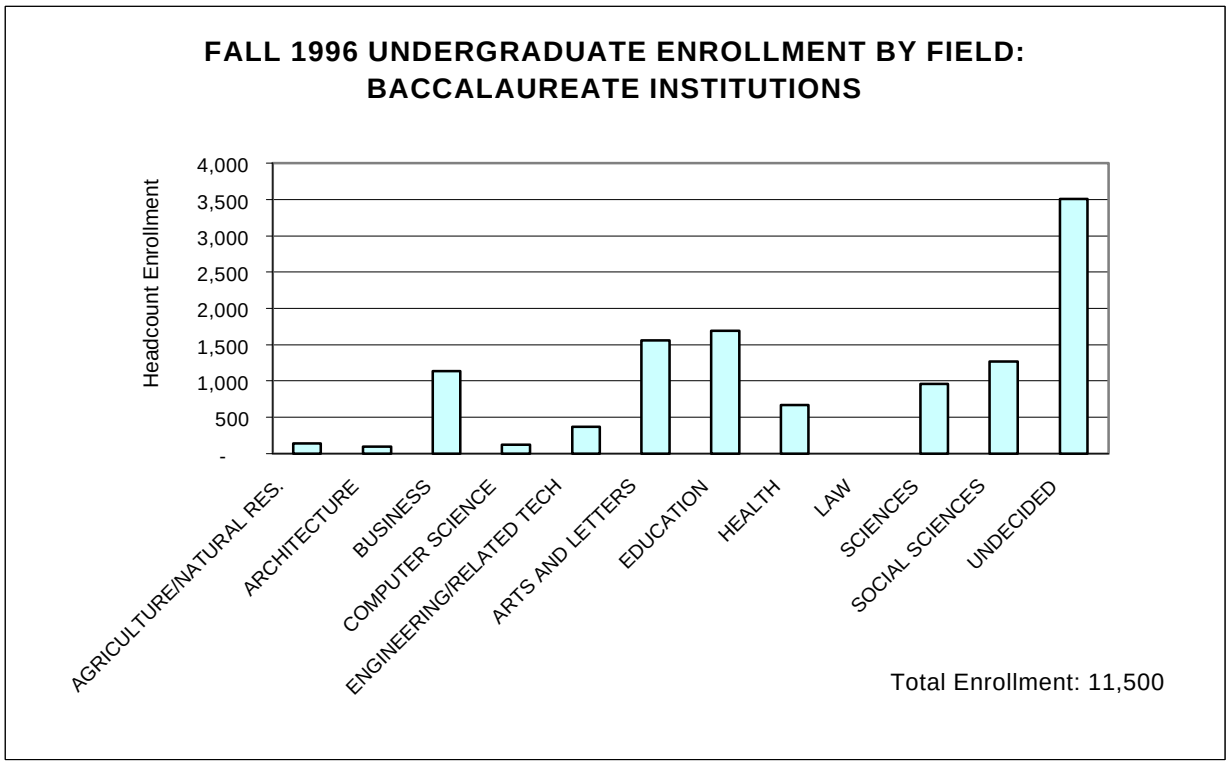
The following is a brief overview of enrollment (headcount) in fall 1996. Although fluctuation has occurred over time fall 1996 is illustrative of current availability of higher education and is analyzed here. More detail for additional years is contained in *Appendix A.*

Undergraduate Enrollment at Baccalaureate Institutions

It should be noted that *enrollment by field* is based on data for those who have declared a major. However, a significant proportion of undergraduate students -- reported for any particular year -- have not declared a major. Therefore, the picture of enrollment by field represents about half of the undergraduate students, since about half are listed as "undecided."

Overall, undergraduate enrollment at Spokane area baccalaureate institutions is at about the same level as experienced in the early 1990s, with some year-to-year fluctuations.

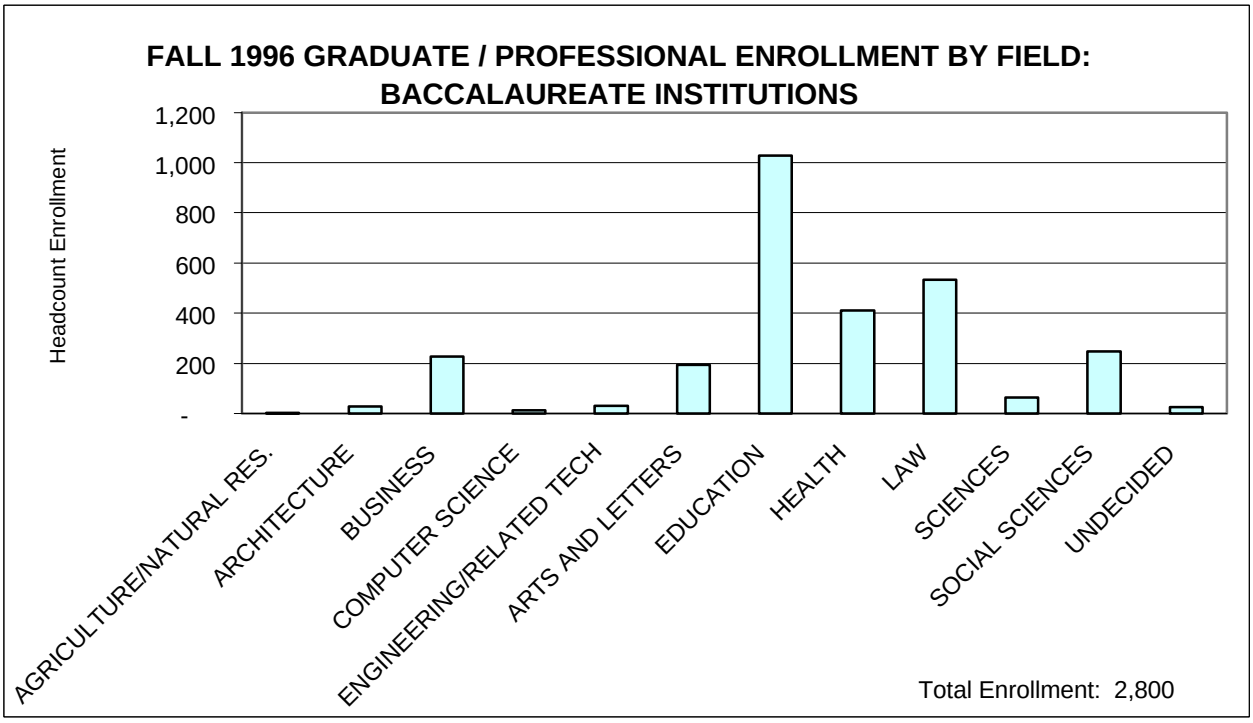
The following graph illustrates enrollment by field for fall 1996.



Although data are available only for those who have declared a major, it is nevertheless noteworthy that nearly all fields show significant numbers of declared majors. Of those who have declared majors, the two fields in fall 1996 with the highest enrollments are education and arts and letters. Combined enrollment in these two fields is 28 percent of the total at baccalaureate institutions. Business, sciences and social sciences together make up about 29 percent of enrollments. Enrollments in all of these fields have increased in recent years. Health-related programs enroll about 6 percent, and engineering/related technologies account for 3 percent. Enrollments in the last few years have remained steady.

Graduate and Professional Enrollment at Baccalaureate Institutions

The following graph illustrates enrollment by field; only a small proportion of graduate students is "undecided." (Note: Degrees granted -- as a reflection of enrollment at the graduate level -- are mainly master's degrees, plus some doctoral and first professional degrees.)



The highest fall 1996-graduate enrollments are in education, with about 37 percent of the total number of graduate students. Over the last several years, education enrollments have declined somewhat. Health constitutes about 15 percent of current graduate enrollment, and has been increasing. Social sciences and business combined constitute about 17 percent. Law school enrollment accounts for 19 percent, specifically at Gonzaga University.

Enrollment at Community Colleges

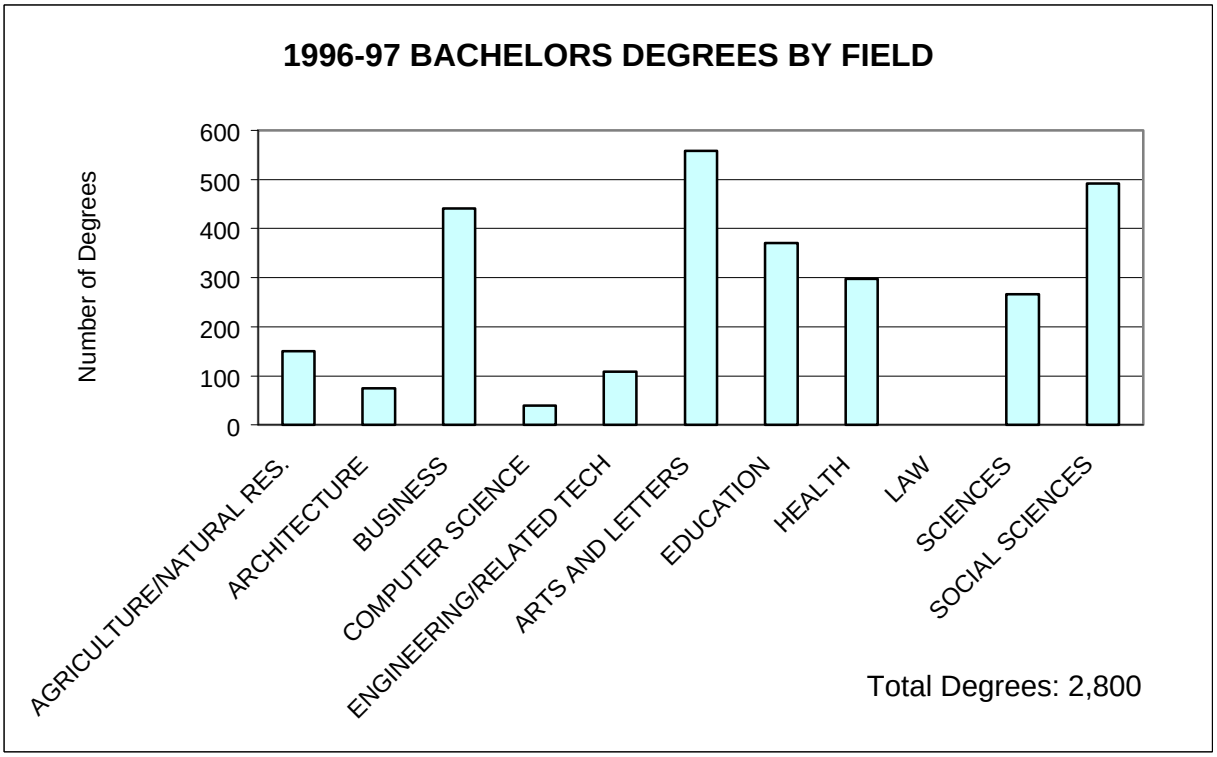
Spokane Community College and Spokane Falls Community College enroll a total of 15,000 students (state-supported enrollment). Based on information provided by the State Board for Community and Technical Colleges, students are classified based on their "purpose for attending." About 43 percent are engaged in workforce training: coursework related to job acquisition or upgrading of job-related skills. An additional 36 percent are pursuing coursework with the goal of transferring to a four-year institution; many will complete an associate's degree before transferring. The remainder of the students are involved in basic skills coursework, including Adult Basic Education, English as a Second Language, and General Education Development. (See *Appendix A* for information by college.)

DEGREES GRANTED: 1996-97

The following is an overview of degrees granted in the academic year 1996-97, the last year for which data are available. Although fluctuation has occurred over time, 1996-97 is illustrative of recent trends and is analyzed here. (For more detail, data for three years are displayed in *Appendix B.*)

Bachelor's Degrees at Baccalaureate Institutions

Overall, as noted above in the discussion of enrollment, bachelor's degrees are awarded in Spokane County in all of the general fields of study. About 2,800 bachelor's degrees were awarded in 1996-97. The following graph illustrates the distribution:

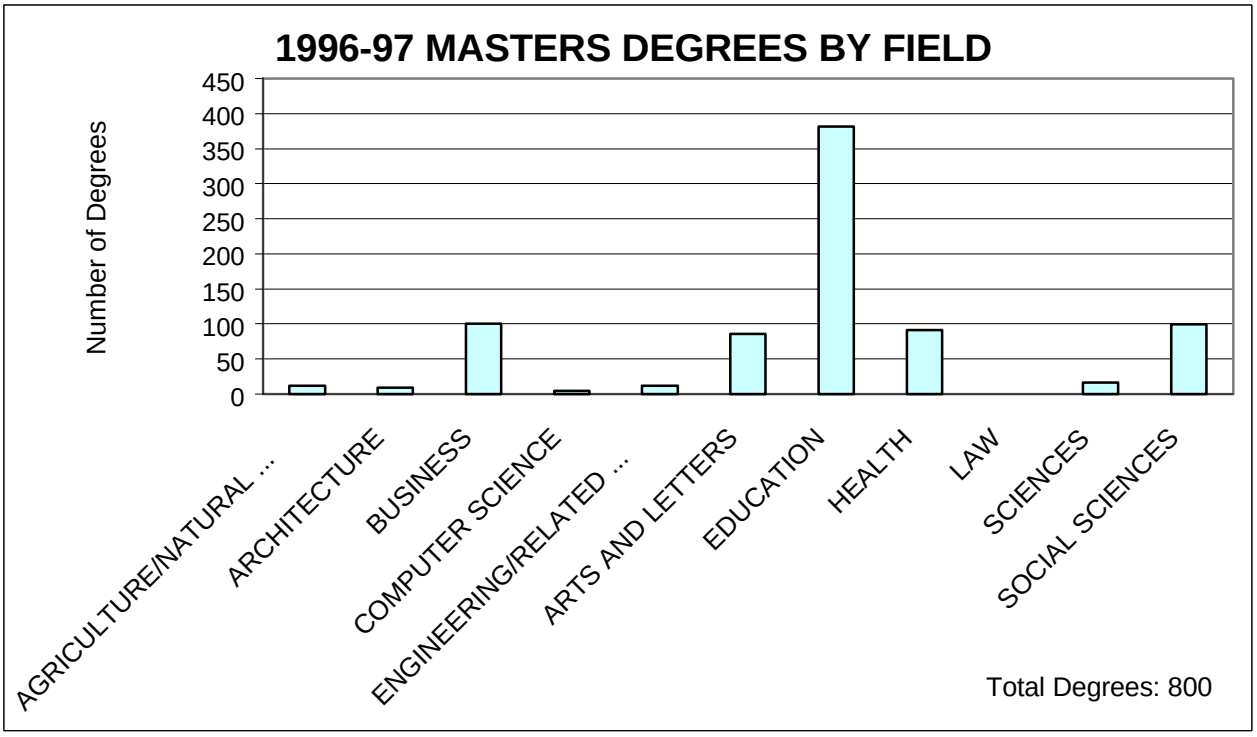


The largest numbers of bachelor's degrees are awarded in arts and letters: about 20 percent. Social sciences account for about 18 percent of degrees granted; business awards 16 percent; education accounts for 13 percent; degrees in health constitute 11 percent. WSU Spokane and EWU award most of the health-related degrees in Spokane.

Master's Degrees at Baccalaureate Institutions

Master's degrees are awarded in all the major fields of study; about 800 degrees were awarded in 1996-97. Several institutions have experienced fluctuations in numbers of degrees awarded from year to year. The table in *Appendix B* provides additional detail.

The following graph shows distribution by field.



As illustrated above:

- The field of education accounted for nearly half of master's degrees awarded.
- Social sciences, business, and arts and letters together comprised about 35 percent.
- Other fields awarded relatively few degrees.

Doctoral and First Professional Degrees

HECB policy generally restricts doctoral programs to the main campuses of Washington's public research universities. Therefore, doctoral and first professional degree offerings are limited in Spokane County.

- Only Gonzaga University offers a doctoral degree, and only in one field, education.
- Gonzaga University offers a first professional degree in law. WSU Spokane also offers an entry-level professional program, Pharm. D. (See *Appendix B* for more detail.)

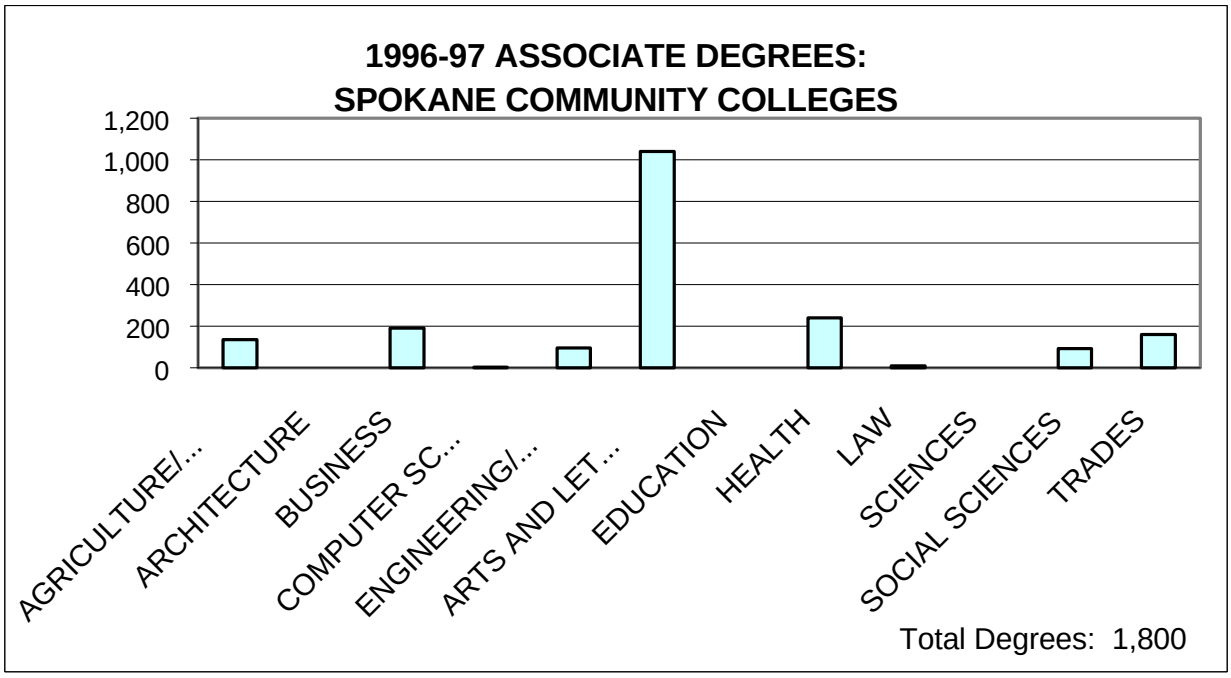
Associate's Degrees and Certificates at the Community Colleges

The State Board for Community and Technical Colleges notes that only about one-third of students enrolled at Washington State public community and technical colleges actually seek a degree or certificate. However, the number of degrees and certificates earned each year is an indicator of the education available at the two-year level.

In Spokane, the community colleges granted 1,800 associate's degrees in 1996-97, as well as over 300 certificates. Certificates require fewer than two years of preparation and are awarded in several fields (as outlined in *Appendix B*).

Associate's degrees require at least two years of coursework, and are awarded in two areas: academic or vocational. An academic award is part of preparation for transfer to a baccalaureate institution. Vocational degrees are part of job preparation.

The graph below shows that over half of associate's degrees are awarded in arts and letters, which is the field in which academic associate transfer degrees are coded.



PART II: SPOKANE HIGHER EDUCATION PUBLIC OPINION SURVEY

Survey Summary

As part of the Higher Education Coordinating Board's assessment of higher education needs in the Spokane area, the HECB staff coordinated a public opinion survey of Spokane County residents. The survey was conducted by the Social and Economic Sciences Research Center at Washington State University. It measured participants' perceptions of the availability of higher education programs in the Spokane area, their attitudes toward higher education in general, and their future education needs and desires. The survey also included questions about the role of distance education technology in meeting residents' educational needs.

Survey participants were very positive about the quality of current higher education programs and services in the region. Although few were enrolled in college or university programs, almost two-thirds said someone in their household was likely to enroll within the next five years.

Greater detail about the survey is provided in this report. The complete survey findings will be shared with Washington State and Eastern Washington universities, so that they can consider the information in the context of their program plans for the Spokane area.

SPOKANE HIGHER EDUCATION PUBLIC OPINION SURVEY OVERVIEW

Profile of survey respondents

A total of 402 Spokane County residents over 18 years old participated in the survey, which was administered by telephone from August 10-25. Survey participants have the following profile (percentages are rounded to the nearest whole number):

- 93 percent have at least a high school diploma or equivalency certificate; 30 percent have a bachelor's, master's or doctoral degree.

- 53 percent are employed full-time; 11 percent are employed part-time; 15 percent are retired. The remainder are full-time homemakers or students or are "doing something else."

- 42 percent are between the ages of 20 and 39.

- 60 percent are women.

- 19 percent earn less than $20,000 per year, and 21 percent earn more than $60,000.

The HECB staff has analyzed both the findings of the survey and the demographic characteristics of the participants.

It is important to note that the pool of respondents is not altogether representative of the general population of Spokane County. Women are over-represented (60 percent in the survey pool vs. 51 percent in the overall population), as are higher-income residents (21 percent over $60,000 income vs. 10 percent) and better-educated adults (30 percent with BA or higher vs. 21 percent).

In fact, the survey participants may be more representative of likely college and university "customers" than they are of the population as a whole.

At the same time, the minimal participation of lower-income and less well-educated residents highlights the challenge of extending higher education services to segments of the population who could most benefit from additional education and training. Ironically, people in these groups may have been less interested in answering questions about higher education.

Attitudes Toward Higher Education

Queried about the *quality* of higher education in the Spokane area compared with higher education in other areas of the state, slightly more than 97 percent of the survey respondents rated the quality as good or very good. When asked to indicate their ***main reason*** for this opinion, approximately 53 percent indicated personal experience, slightly less than 4 percent indicated this opinion was based on things they heard from others, and a little more than 10 percent indicated it was based on things they have read. In testing the perception that many qualified people *can't* go to college, slightly more than 79 percent of the respondents somewhat or strongly agreed with the notion. There was no follow-up question to assess the reasons for this response.

Current Higher Education Activities

Only 44 (11%) of the respondents were currently enrolled in higher education. Among these people, 30 percent (13) were enrolled either at EWU (12) or WSU (1), 43 percent (19) were enrolled at a community college, and the rest were enrolled at a private baccalaureate institution (8) or other place of higher education (4). When asked to identify the single most important reason for pursuing additional education, the responses were evenly distributed among the following choices: gain an academic degree or certificate, obtain a job, advance in a current career, and fulfill a personal interest.

Although only 11 percent of the people surveyed were currently enrolled in higher education, 64 percent of the respondents indicated that they or someone in their household were somewhat or very likely to enroll in a higher education program in the next five years. When asked what kind of a degree program either they or that person would be seeking, 36 percent indicated a bachelor's degree; 20 percent a master's degree; and 11 percent a certificate program. Nearly 4 percent indicated a doctorate degree. While not specifying a degree, it is interesting that 10 percent specified short courses or individual college level courses.

Following are the areas of study respondents were likely to pursue. Almost 50 percent of the responses were clustered in the fields of business, education, and health.

Respondents Likely to Enroll Within Five Years	
Fields of Study	**Percent of Respondents**
Agriculture/Natural Resources	2.5
Architecture	1.0
Business	**20.7**

Computer Science	6.6
Engineering-related Technology	9.6
Arts and Letters	9.1
Education	**15.6**
Health	**12.6**
Law	2.5
Sciences	8.1
Social Sciences	8.1
Undecided	3.5

Preferred Characteristics of Learning Environments

Respondents were asked to comment upon the importance to them of certain qualities of the college learning environment. The numbers listed below indicate the percentage of people who considered that characteristic to be ***very*** important.

- Opportunity to interact with the instructor: 68%
- Opportunity to interact with other students: 58%
- Opportunity to use in-line technology (e.g., e-mail, list serves, etc.): 59%
- Being part of a group that is taking the same course at the same time: 47%
- Opportunity to start a course at any time: 34%
- Opportunity to complete a course at own pace: 36%

Respondents were also asked at what time of day they would prefer to take classes. Most (50%) preferred evening classes, although weekday classes were a close second (43%). Only 7 percent preferred weekend classes.

Perceptions of Distance Learning

Respondents were asked to describe their experiences with, and attitudes toward, distance learning. Fifty percent indicated that their decision to enroll in college-level classes would ***not*** be affected if those courses were available primarily through distance education, such as over the internet or by mail. Twenty-eight percent said they would be ***more*** likely to enroll, while 21 percent would be ***less*** likely to enroll.

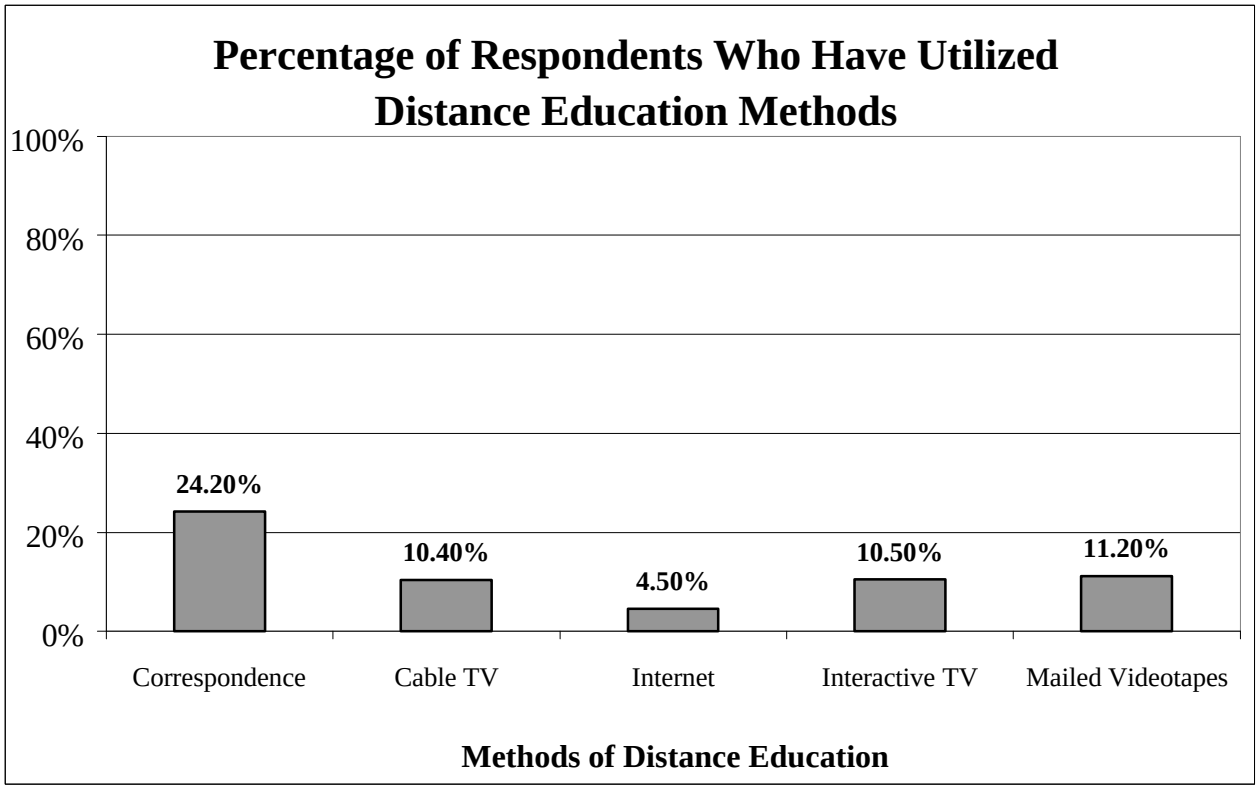
Many respondents endorsed technology as a way to make it possible for more Spokane area students to get into higher education. Ninety-three percent favored the idea of developing technology to provide college and other courses at various times and locations away from the main campus. Similarly, 88 percent favored using technology to teach more students as a way of increasing access throughout the state.

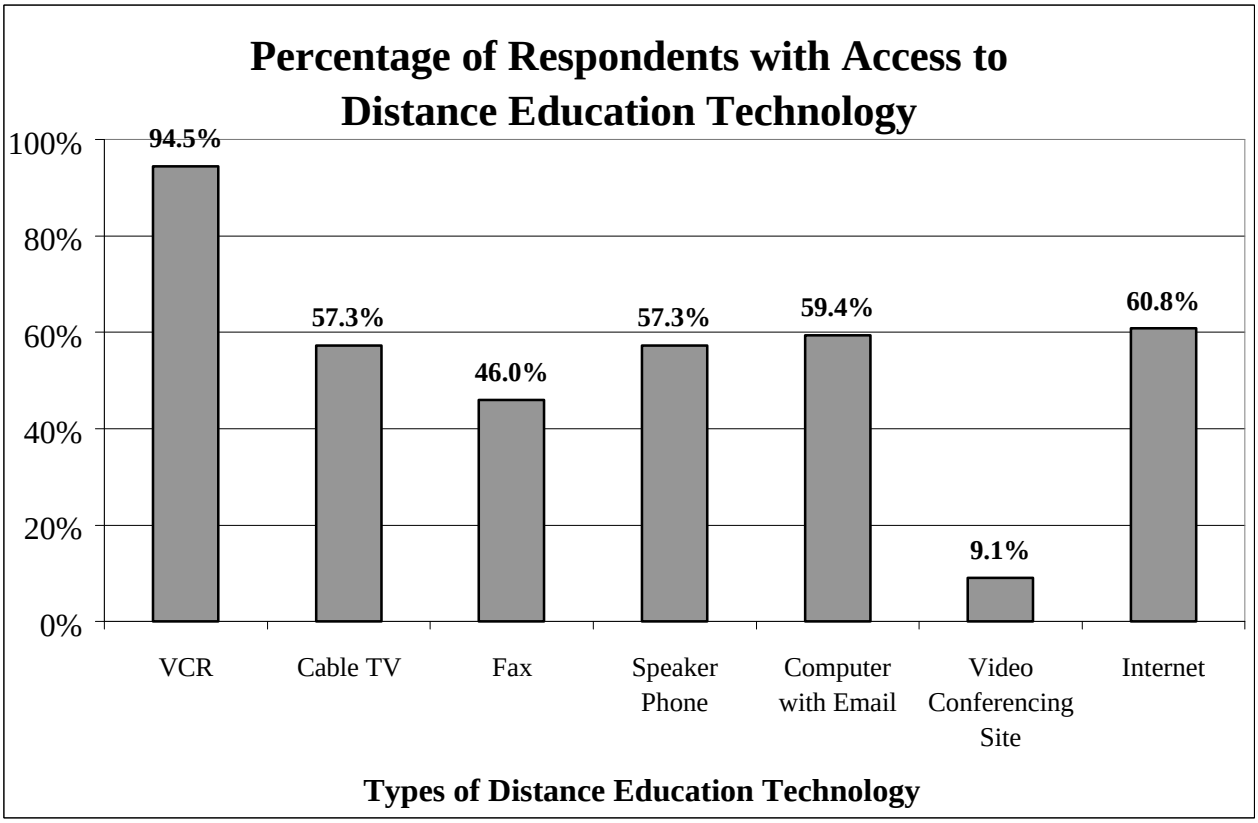
Correspondence courses were the form of distance education that the largest number of respondents (97) had experienced. Many people reported having access to technology that could assist distance learning. Graphs depicting respondents' experience with distance education methods and their access to distance education technology are on the next page.

Conclusion

The opinion poll provides information on interest in higher education in the Spokane area and will be useful to the Higher Education Coordinating Board, Washington State University, Eastern Washington University and all higher education partners in the Spokane region. Because the scope of the poll is limited, it needs to be viewed as a foundational piece to an ongoing needs assessment process.

The high receptivity to distance learning delivery methods disclosed in the poll should be further explored. The public's response to distance learning technology and opportunities could have substantial impact on planning for educational infrastructure in the Spokane area.


Percentage of Respondents Who Have Utilized Distance Education Methods
100%
80%
60%
40%
20%
0%
24.20%
10.40%
4.50%
10.50%
11.20%
Correspondence
Cable TV
Internet
Interactive TV
Mailed Videotapes
Methods of Distance Education


Percentage of Respondents with Access to Distance Education Technology
100%
80%
60%
40%
20%
0%
94.5%
57.3%
46.0%
57.3%
59.4%
9.1%
60.8%
VCR
Cable TV
Fax
Speaker Phone
Computer with Email
Video Conferencing Site
Internet
Types of Distance Education Technology

Spokane Area Higher Education Services Study: Economic Assessment by Northwest Policy Center

January 1999

Introduction

The purpose of this report is to assist the Higher Education Coordinating Board in understanding key characteristics and trends in the development of the Spokane area economy, and the contributions higher education can make to the local development process. By supporting local industries requiring engineers, scientists, technical writers, managers, lawyers, and various other college-educated workers, higher education institutions providing programs in the Spokane area play a key role in the development process. In addition to education and shorter term training programs, colleges and universities often support economic development through research and development programs and technical assistance activities. All of these potential demands for higher education services originating with employers in the Spokane area are considered in this report.

Higher education programs also serve residents of an area who wish to upgrade their skills in order to move up to a better job with a current or alternative employer, or who pursue learning for its own value rather than from a career goal perspective. By focusing on employer demands, the report is not intended to ignore demand from area residents who may or may not be seeking education to advance their opportunities with local employers. Universities often focus on residents' demands without considering labor market needs; this report is precisely intended to complement the resident-focused studies universities often use to plan their programs. By focusing on the relationships between higher education and local employers, this report adds to information to the debates over the role of higher education services in the Spokane area.

The report begins with a review of existing, relatively current economic studies of the Spokane area to provide a perspective on the current structure and characteristics of the economy and likely directions for the development of the economy. Long term industry employment forecasts are then reviewed. In addition, the report explores the possible contributions higher education could make to future economic development in the Spokane area by developing scenarios for future economic development of selected industry groups and translating these industry projections into occupational categories. Based on available ratings of the educational requirements of various occupations, implications are drawn for needed higher education services to support the industry scenarios. Additional inputs were provided by visits to local firms, focus group discussions focusing on advanced technology and health care industries, and a public meeting providing feedback from an expert panel and from local residents. An appendix summarizes comments made in the focus groups and the public meeting. The report concludes with some thoughts about the future of the economy and of educational service programs in the Spokane area.

Descriptions of Local Economic Structure and Trends

A number of analyses of Spokane's economy have been prepared in recent years as part of the strategic planning processes initiated by area business leaders. These studies, including work by

Washington State University economist Gary Smith, constitute most of the available work on the structure and dynamics of the Spokane economy. Prof. Smith's work precedes other major studies and is therefore described first, followed by a major consulting report by the PACE Group, a report that contributed strongly to the debate over strategic issues within the area's business leadership in the last several years. Several other studies are reviewed at the end of this section.

Personal Income and Employment Trends

Washington State University economist Gary Smith has compiled two studies of personal income and employment trends in Spokane County. The first, published in 1994, examines trends from 1969 to 1991, while the second, briefer treatment extends the analysis through 1993. Both studies contain a wealth of information, and only the most striking facts are summarized here. Spokane County is the fourth largest of Washington's 39 counties, and was home to over 373 thousand individuals in 1991. During the 1980s, Spokane's population growth of 0.62% trailed the statewide rate of 1.98%; much of the statewide growth was contained in the Puget Sound region during this decade.

While not covered in Smith's study, it should be noted that the Boeing's workforce decline in the Puget Sound in the early 1990s took place simultaneously with a severe manufacturing/defense industry recession in Southern California. These two factors combined to produce some very unusual interstate migration patterns and intrastate location choices. In the first half of the 1990s, there were much higher population growth rates in Spokane than in the Puget Sound, and similarly high and perhaps anomalous growth rates in other parts of eastern Washington. Boeing's resurgence since 1996 and renewed vitality in Southern California has resulted in a return to the more typical pattern of the Puget Sound dominating statewide growth statistics.

Spokane also ranked fourth in the state in total personal income receipts, following the three largest Puget Sound counties. Personal income increases over the 1969-91 time period echoed the nation's rate of increase, but lagged performance in the Puget Sound. Spokane did better than the nation in the 1970s, but lagged the national pace in the 1980s. In per capita terms, Spokane saw a real net gain of 32.1% from 1969 to 1991, a pace of income growth that lagged both the nation and the statewide average. The level of income per capita in Spokane exceeded that in Whatcom and Yakima Counties in 1991, but was lower than the level in the remaining metropolitan counties of the state. Much of the increase in both total and per capita income took place during the 1970s, a period of relatively strong economic performance in Spokane.

Employment growth between 1969 and 1991 totaled 80,429, a 67.2% increase over the 22 year period. This pace of expansion exceeded that in Pierce and Yakima Counties, but trailed behind the other metropolitan counties in Washington.

Personal income comes from three sources: net industry earnings, property income, and transfer payments. Spokane County's real total personal income rose 17.4% from 1979-91, but the three components grew at quite different rates: transfer payments accounted for 50.9 % of the growth of personal income between 1969 and 1991. As a result, the county gained 20.7% of all personal income from transfer payments as of 1991, as compared to 16% for the state and the nation as a whole. Spokane ranked higher in dependence on transfer payments than any other metropolitan county in Washington in 1991, and was relatively high on five of six components within the transfer payments category (retirement, medical, income maintenance, veteran's benefits, and "other") and relatively low on one category (unemployment benefits). Medical related transfers grew more rapidly than any other type over the 22 year period from 1969-91.

Another distinguishing feature of the Spokane area is revealed in the industry earnings statistics. In 1991, manufacturing, construction and mining – the goods producing industries – accounted for 21.8% of all industry earnings. This is a distinctly lower percentage than for the state (29.8%) or the nation (27.3%). This distinct tilt of the Spokane economy towards the service producing industries is also shown in comparisons of Spokane and statewide earnings from the service producing sectors. Spokane is distinguished by relatively high earnings shares from wholesale and retail trade, federal military, and state and local government. The services sector (narrowly defined as business, personal, and health services) accounted for about the same share of industry earnings in Spokane and nationally; however, the health services sector is relatively larger in Spokane (13% vs 8.6% nationally) and the business and personal services sectors provide relatively small shares of earnings in Spokane.

Relatively lackluster earnings performance in the 1980s was concentrated in the goods producing industries, and all of the service producing industries except government and services (narrowly defined as a sector). As a consequence of weak performance in most sectors of the Spokane economy, total real earnings grew just 0.53%, in contrast to national growth of 1.55% annually from 1969-91.

Average earnings per job increased threefold from 1969 to 1991, but inflation destroyed these gains. Measured in real terms, earnings per job declined by 6.3% over the 22 year period from $19,196 to $17,993, expressed in 1987 dollars. Earnings per job declined all over the state from 1919 to 1985, but began to climb thereafter. In Spokane, the decline continued but may have stabilized in the mid-1990s. Declines in construction wages accounted for a substantial share of the earnings decline per job during the 1980s.

Smith's update (Smith 1996) presents data through 1993; this study suggests an improving period in Spokane in the early 1990s. The 5.4% gain in per capita personal income from 1989 to 1993 exceeded the gain over the entire prior decade, closing some of the gap in per capita income between the national level and that in Spokane as Spokane's per capita income rose from 85.4% of the national level in 1988 to 90.1% by 1993. Transfer payments continued to account for a large portion of growth in Spokane's income, increasing to 21.2% of total income from 20.7 in 1991. By 1993, commuting from the Coeur d' Alene, Idaho area had become a significant part of the Spokane economy. Since personal income statistics are intended to depict income of an area's residents, an adjustment is made to earnings for workers who live in another jurisdiction. This adjustment amounted to 7.1% of personal income in 1993.

Smith's update contains a special analysis of comparative shifts in industry mix and in jobs per resident in Spokane compared to the nation. Using a shift-share methodology, Smith demonstrates that the earnings decline of the 1980s was not due to an adverse shift towards low wage industries, but due to a broad based decline in earnings across all industries in Spokane. In addition, he concludes changes in the number of jobs per resident has a powerful effect on relative rates of increase in per capita earnings. He suggests that a local economic development strategy based on recruiting high wage manufacturing jobs may be misdirected since the apparent problem in Spokane is not a shift towards low wage service producing industries, but overall wage declines and changes in labor force participation rates.

The PACE Study

In 1995, the PACE Group was engaged by Spokane area leaders to conduct an assessment of local economic trends and provide advice on economic development strategies. PACE study reviews employment and personal income trends, but also considers the cost of living, tax competitiveness, crime rates, and a variety of other factors. Some of the key findings of this report include:

- Manufacturing employment grew 4.2% from 1988 to 1994, the slowest pace of all of the major sectors of the economy;
- Service sector employment, in contrast, expanded 32%;
- Manufacturing industries contributed 10.1% of total personal income in Spokane, compared to 14.0% for the state and 13.6% nationally; the non-durable goods industries in particular are not as well represented in the Spokane area compared to the state or nation;
- Workforce shortages exist in the Spokane area for both high skilled technical positions and entry level, unskilled worker positions;
- Low annual wage levels in services other than health services ($14,734) and retail trade ($13,918) results in 45% of the workforce earning less than $15,000 per year;
- 12.5% of Spokane County families live at or below the poverty level, as compared to just 7.8% statewide and 10.0% nationally; 21.7% of Spokane County children live in poverty compared to 14.0% statewide and 17.9% nationally;
- From a marketing perspective, Spokane may not be seen as a very good market because the region's Effective Buying Income ranks 128th out of 316 metropolitan areas in the U.S., next to last among communities judged competitive with Spokane by the PACE Group; and
- While Spokane may be able to market itself as a low labor cost area, it is not a low living cost area; the cost of living index for Spokane is 106.7, that is, 6.7% higher than the average of all areas included in the index; the index for housing costs in Spokane stands at 131.9; housing costs rose 46.7% between 1991 and 1994, contributing to the high housing index and the above average overall index.

The PACE findings about low wages in services and retail, and high incidence of poverty became key issues in public discussions about economic development strategy. Leaders from the Chamber of Commerce and other groups have mentioned these findings as ones that galvanized local debate and lead to some new directions for economic development strategy. For example, a new strategic plan called the "New Century Plan" identifies several key benchmarks for progress including bringing average private sector earnings per job up to or beyond the national level and reducing the incidence poverty to below national and statewide levels (*New Century Plan*, p. 2).

The PACE Group notes several current and potential advantages of the Spokane economy around which development strategies could be built. Current advantages include low energy costs, a high quality of life, strong health care services, and a regional service center serving a variety of business needs. Potential strengths that could be built into regional advantages include SIRTI, a technical workforce, telecommunications capacity, higher education, and quality sites for business use.

International Trade Study

The late 20th Century has seen the emergence of a global economy. As major corporations build multinational strategic alliances to serve global markets, many states and local areas have begun to systematically consider their position in the world economy. Mike Rennaker of Strategic Resources prepared a study of international trade influences on the Spokane economy in 1997. The report addresses issues of concern in a multi-county region including northeastern Washington, the Idaho Panhandle, Spokane County, and Whitman County to the south of Spokane. Rennaker portrays

Spokane as the trade center for a multi-county three state region. This region shares with the state of Washington a strong commitment to the global marketplace. Exports per capita are $500 above the national average in the Spokane region. Traditional exports of aluminum, and food and wood commodities are balanced by technology based sectors such as hardware and software for the computer and communications industries. All of the major technology based companies in the area have significant export markets, including Boeing, Hewlett-Packard, Itron, Johnson-Matthey, Keytronic, and Telect. International markets have grown rapidly in recent years; SIC 35, machinery including computers and related equipment, has expanded at about 16% annually in recent years.

This report also notes that higher education is in effect an exporting sector, since foreign students bring $50 million a year into the Spokane area economy. This total includes students at Washington State University in Pullman and North Idaho College as well as the institutions located in Spokane County.

The report concludes with suggestions for further developing the export base of the region:

- focusing assistance on food and technology based companies;
- providing specialized information an services in key growing markets;
- facilitating interaction between potential exporters and both public and private sources of assistance; and
- sponsoring educational and trade-related seminars and activities.

A Marketer's View

Another intriguing viewpoint on the Spokane economy is provided by the director of marketing for the *Spokesman Review*, the leading newspaper in Spokane,. Shaun O'L. Higgins is a national leader in using quantitative information about metropolitan areas to define marketing strategies. As a local leader, he has provided annual forecasts of the Spokane economy for many years. His examination of key characteristics of the Spokane economy is provided in a book entitled *Measuring Spokane*. Using a variety of data sources, he develops information on eating and drinking places, recreational behavior, and demographic characteristics. Parts of the book examine characteristics of a large Inland Northwest region embracing eastern Washington, northern Idaho, and western Montana. Spokane is the regional trade and service center for this entire region. Considering just the two core counties, Spokane in Washington and adjacent Kootenai County (Coeur d'Alene) in Idaho, five key characteristics stand out that distinguish the Spokane region from other U.S. metropolitan areas:

- a lower percentage of minority population;
- lower median household income and wage levels;
- fewer adults employed full-time;
- fewer working women; and
- more adults who have taken at least some college level courses.

In addition, Higgins notes that the percentage of the population owning recreational or four wheel drive vehicles is large, and there are high percentages of residents who ski, hike, fish, and camp in the outdoors. These attributes define a characteristic outdoors-oriented lifestyle that is a key lifestyle definer of the area from a marketing point of view.

Synthesis of Key Findings

Examining all of these studies, several relatively consistent findings emerge, describing enduring trends of the Spokane area economy. These findings include:

- low wages and high poverty rates;
- a service oriented economy serving a broad, multi-state, inland region;
- low overall contributions of manufacturing to total employment and income, but some outstanding manufacturing companies in both mature and emerging high tech sectors;
- a relatively large health care sector given the size of the urban area in which it is located;
- workforce skill deficits in both advanced technical occupations and low skill entry-level positions;
- a high quality of life, based on utilization of the scenic qualities of the natural environment and its capacity to support recreational activities; and
- slightly higher than average cost of living, which coupled with low wages, presents a challenge to the many area workers with quite low earnings.

Given the overall purpose of this study, examining the potential contribution of higher education to the future development of the Spokane area, several of these key features of the Spokane economy can be seen as problems that should be remedied, and problems that higher education is a key to resolving:

- skill deficiencies in the workforce, especially for technical positions;
- support for a strong and growing health care sector; and
- potential to build a stronger high tech sector.

However, another enduring characteristic of the region is low wage levels compared to other major metropolitan areas in the U.S. While these low wage levels can be seen as an advantage to local businesses, they may contribute both to low skill levels in the workforce and they may inhibit the willingness of local people to invest in higher education. Why forego earnings and pay tuition to earn a degree unless it will result in substantially higher earnings? For those residents of the area that are committed to staying, or those key workers industries would like to recruit in to address skill shortages, the wage scale in the region is also a problematic factor. In considering the future role of higher education in Spokane, careful attention is needed to this two-sided wage issue. Any higher education program expansions must be built around occupations and sectors where higher wages are possible to entice students, while not destroying businesscompetitiveness.

Long Term Forecasts

Two formal long term forecasts have been prepared recently for the Spokane area, looking forward 7 to 20 years. Washington Water Power Company (WWP) regularly prepares a long term forecast to guide its business planning. In addition, under a federal program, the State of Washington Employment Security Department (ESD) prepares a periodic long term forecast under guidelines and procedures developed by the U.S. Department of Labor. In addition, the Strategic Alliance has developed projections of potential growth rates for various industry groups for the period 1995-2000. While these projections are not a formal forecast in the same sense as the WWP and ESD forecasts, they do represent the informed judgement of area business leaders and a reputable consulting company as to the level of growth that may be attainable in various sectors. These three forecasts are described and compared below.

Washington Water Power Forecast

Washington Water Power employs a professional economist who prepares forecasts for the company using a proprietary simultaneous equations model. No description of the structure of the model is available, but Randy Barcus, the WWP economist, indicates that both direct changes to the economy and the indirect, or multiplier impacts, of the direct changes are fully accounted for in the model. An attractive feature of the model is that it provides annual projections for employment at a high degree of industry disaggregation. The other forecasts provide less industry detail, and projections for only one or two future years. Because the WWP forecast is available with more industry and temporal detail, it provides a base against which each of the other two forecasts can be compared. However, it is not possible to directly compare the ESD and Strategic Alliance forecasts because the time periods are different.

The WWP forecast is the most optimistic of the three forecasts. WWP envisages a 1.68% long term annualized growth rate for total employment in Spokane County from 1996 to 2019. For the period from 1996 to 2001, a time frame equivalent to the ESD forecast discussed below, the overall growth rate projection is 2.2%. Under these assumptions, total employment of nearly 181 thousand grows to over 206 thousand by 2006. Sectoral contributions to growth in both time frames are shown in Tables 1 and 2. Under these assumptions, total employment of nearly 181 thousand in 1996 grows to over 206 thousand by 2006. In both the medium term and long term time frames, health services is the most rapidly growing sector in this forecast, followed by other services. Manufacturing grows very slowly, with retail trade doing only slightly better. Consistent with many other long term forecasts, the overall growth rate slows in the longer term due to slower growth of the labor force in the post-Baby Boom era of the 21st Century.

Employment Security Department Forecast

The Washington State Employment Security Department forecast is prepared under federal guidelines by the area economist responsible for Spokane area labor market data. Based on national forecasts and knowledge of local conditions, the area economist estimates change factors describing long term employment change for various sectors of the economy. The sectoring plan is consistent with federal confidentiality rules that prohibit release of information for sectors with fewer than three employees, or sectors in which more than 80% of the workforce is employed by a single company (unless the affected employers authorize release of the information. As a consequence the sector detail in the ESD forecast is much more limited than it the WWP forecast.

Table 1: Washington Water Power Forecast:
Forecasted Annualized Growth Rates

	1996-2001	1996-2019
Total Nonagricultural Employment	2.22	1.68
Manufacturing	1.38	1.01
Health Services	3.27	2.79
Other Services	3.05	2.19
Retail Trade	1.70	1.12
Government	1.80	1.67

Source: calculations from annual forecast data provided by Randy Barcus, Washington Water Power Company, June 1998

Table 2: Washington Water Power Forecast:
Employment in Thousands

	1991	1996	2001	2006	2011	2016	2019
Food	1.355	1.373	1.36	1.372	1.337	1.255	1.188
Lumber&Wood	1.1	1.302	1.512	1.499	1.369	1.224	1.137
Primary Metals	3.575	3.539	3.577	3.505	3.448	3.394	3.339
Fabricated Metals	1.085	1.218	1.276	1.32	1.358	1.389	1.386
Equipment (Industrial & Electronic)	5.403	6.002	6.724	7.318	7.787	7.905	7.915
Transportation	1.225	1.745	2.155	2.318	2.56	2.811	2.96
Other	6.082	6.58	7.251	7.651	8.398	9.144	9.496
Total Manufacturing	19.825	21.783	23.855	24.984	26.257	27.122	27.421
Construction	8.233	9.613	9.613	12.127	13.076	13.512	13.364
FIRE	8.958	10.331	10.331	12.718	15.819	17.185	18.04
Government	27.825	29.61	29.61	32.278	38.296	41.39	43.359
TCU	7.75	8.022	8.022	8.439	8.085	7.815	7.587
Services less health	27.592	34.713	34.713	41.79	51.192	54.994	57.11
Health Services	17.5	19.79	19.79	23.807	30.947	34.735	37.265
Serv Total	45.092	54.503	54.503	65.597	82.139	89.729	94.375
Retail Trade	31.136	35.609	35.609	38.606	44.509	45.789	46.072
Wholesale Trade	10.564	11.286	11.286	12.862	14.254	14.707	14.904
Total Non-Agricultural Employment	159.383	180.752	180.752	206.484	242.435	257.249	265.121
Mid-Year Population	372.3	413.782	444.925	472.746	496.602	519.283	532.794

Table 3: Employment Security Department Long Term Employment Forecast: Forecasted Annualized Growth Rates

	1996-2001
Total Nonagricultural Employment	1.81
Manufacturing	1.12
Construction & Mining	2.05
Transportation & Utilities	0.3
Wholesale trade	0.82
Retail trade	1.52
Finance, Insurance & Real Estate	1.85
Services	2.52
Health services	2.98
Government	1.83
Federal government	-1.00
State & local government	2.25

Source: Fred Walsh, Employment Security Department, Spokane, WA, June 1998

Table 4: Employment Security Department Long Term Employment Forecast: Employment in Thousands

	000s		
	1996	2001	2006
Manufacturing	21.9	23.0	24.7
Primary metals	3.6	3.8	4.0
Transportation equipment	1.7	1.9	2.0
Construction & Mining	10.7	12.2	13.1
Transportation & Utilitities	8.3	8.5	8.5
Wholesale & Retail Trade	45.9	49.4	52.6
Wholesale trade	11.3	11.8	12.3
Retail trade	34.6	37.6	40.3
Gen'l mech & apparel	5.0	5.2	5.3
Food stores	5.0	5.6	6.0
Eating & drinking places	12.6	15.0	16.7
Finance, Insurance & Real Estate	10.4	11.4	12.5
Finance	5.1	5.4	5.7
Services	54.2	62.8	69.5
Health services	19.8	24.0	26.6
Government	30.0	33.9	36.0
Federal	4.3	4.0	3.9
State & local	25.7	29.9	32.1
TOTAL	181.4	201.2	216.9

As shown in Table 3, ESD forecasts a slower overall growth rate than does WWP from 1996 to 2001. Consistent with that overall forecast, each private sector that can be compared to the WWP forecast

also grows more slowly. In the public sector, ESD forecasts slightly higher growth than WWP. Government is forecasted to growth at a 1.83% annual rate, with the federal government declining while state and local governments continue to expand. WWP forecasts a slightly lower overall growth rate of 1.80%, a very small difference that may not be significant. WWP does not break out federal from other levels of government.

Strategic Alliance Forecast

The Strategic Alliance Business Retention and Expansion Study offers projections for growth by industry from 1995-2000. No source or methodology is given for the projections, although a footnote suggests that the projections may come from a county profile prepared by ESD in 1995. No employment level is provided either; the report simply provides growth rates for the period 1995 to 2000. The growth rates in these projections are generally below the current forecasts of either WWP or ESD.

Table 5: Strategic Alliance Annualized Growth Projections

	1995-2000
Manufacturing	0.65
Construction	0.6
TCU	-0.495
FIRE	1.09
Wholesale Trade	0.5
Retail	1.94
Services/excl. Health	1.19
Government	1.08

Source: Spokane Region Business and Retention Study, p. 22.

Comparison of Forecasts

While these three forecasts differ in their expectations for the overall growth rate in Spokane County during the coming years, they agree substantially in several respects. The health care sector is expected to be the fastest growing sector in two of the three forecasts. All three forecasts suggest that non-health care services will grow more rapidly than any other sector of the economy except for health care. All three forecasts suggest that manufacturing will be a lagging sector, expanding but only at a relatively slow pace compared to other sectors. Government is expected to be a modestly growing sector, perhaps due to a common expectation that federal government agencies will continue to trim their payrolls. The forecasts seem to differ in their expectations in two areas, but the different time frames of the forecasts make comparisons difficult. The Strategic Alliance forecast seems to suggest higher expectations for retail trade, and a period of decline for the transportation, communications and utilities sector. The other two forecasts project modest expansion for the utilities and transportation services companies, and suggest a more modest expansion path for retail trade. The strongest point to be gleaned from this comparison is the key role played in Spokane by the health care sector, and the relatively weak expectations for continued growth of manufacturing employment.

Possible Development Scenarios

The future of the Spokane area economy may not resemble its past in terms of the sectors providing jobs and the educational attainment levels needed to obtain and hold jobs in the area. All industries shift over time in the types of workers they need and the skill sets required to be a productive member of the workforce. In addition, the economy may make sharp turns over time as new industries come in and older ones wane as sources of employment for residents of an area. In this section, three alternative development paths are considered for Spokane's economy. These scenarios reflect trends and findings from the studies and forecasts reviewed above, as well as macro-scale trends in the national and global economies. A base case or "Business as Usual Scenario" is based on an existing long term forecast for Spokane. This base case is compared to alternative development scenarios emphasizing high tech industries and further development of the health care sector.

The long term forecast from the Employment Security Department (ESD) is the basis for the "Business as Usual" scenario. The high tech scenario was developed based on the definition of high tech industry used in a study of the state economy funded by the High Tech Alliance, a subsidiary of the Greater Seattle Chamber of Commerce. The health care scenario was developed assuming a more rapid development of the health care sectors in Spokane than that assumed in the ESD forecast. These alternative development scenarios are not forecasts in any traditional sense; rather, they are "what if" exercises designed to show what might happen if a particular development path is realized as a consequence of private sector decisions, "nudging" from the economic development groups in the Spokane area, and support from other institutions including higher education. Nor are these alternatives necessarily "choices" that policymakers and business leaders in Spokane must select on an exclusive basis. It may be possible to emphasize both alternatives, or others, including more manufacturing-oriented development paths as area leaders develop strategic plans and investment packages in the coming years. These two development alternatives do represent likely development options since the high tech industries are expanding rapidly, and both an aging population and new high tech medical applications suggest opportunities to expand health care services.

Analytical Methodology

A major purpose of the alternative scenarios is to provide a vehicle for examining the implications of changes in the structure of the economy for higher education services. It is possible that the rapid expansion of one or both of these alternative industries could have very different educational implications than the economy that now exists in Spokane. In order to analyze the educational implications of alternative development paths, data were assembled describing the patterns of use of particular occupations by each industry in Spokane, and the educational attainment required to enter each occupation.

Jobs were described using the Occupational Employment Statistics (OES) system developed by the U.S. Department of Commerce, Bureau of Labor Statistics (BLS). The OES system is a hierarchical system with over 500 detailed occupational categories arranged in higher level aggregated groupings:

- Management and Administrative
- Professional, Paraprofessional, and Technical
- Sales and Related
- Clerical and Administrative Support

- Service
- Agricultural, Forestry, Fishing, and Related
- Production, Construction, Operating, Maintenance, and Material Handling.

This occupational classification system is used by ESD to survey industries to discover how their staff is allocated by occupational category. Based on these occupational staffing patterns, BLS and ESD prepare occupational forecasts based on long term aggregate industry employment forecasts prepared by these same agencies.

Ratings of the education, training, or work experience required to enter each of the individual job types were obtained from the *Occupational Outlook Handbook* (OOH). This standard reference source provides estimates of the education or training generally required to enter an occupation and for workers to attain average job performance in the occupation.

In this analysis of alternative development scenarios for Spokane, ESD's long term forecast for Spokane for 1995 to 2005 was obtained, along with data on the staffing patterns by industry. Educational requirements ratings for each occupation were then added. The combined staffing/education requirements file for individual industries was used to assess the education requirements for the net new hires in the base case and alternative development scenarios.

A few words of caution are in order about this analysis. First, the OOH ratings of the education or training required to enter an occupation represent analysts' best judgement based on surveys BLS conducts. It is possible that in a local labor market, employers may make somewhat different hiring choices depending on the pool of applicants available in that region. Second, staffing patterns change rapidly in some industries such as the rapidly evolving high tech industries. In software, multimedia developers and web designers are in demand today; these occupational categories did not exist 3-5 years ago. Third, skill requirements in all industries are increasing as higher levels of technology are introduced. For example, automobile and farm equipment repair now requires considerable computer and electronics expertise, and office jobs require familiarity with a range of business software applications. Many workers need or desire upgrade training or education to remain competitive in the workplace or to make a transition into a new occupation. Fourth, the alternative scenarios show only the direct employment and occupational patterns for the sectors directly included in the scenario; no secondary or multiplier impacts are considered on other sectors of the economy and other occupations hired in those sectors.

A final and very important issue to keep in mind is that ESD and BLS operate under a set of confidentiality rules embedded in federal law and rule-making proceedings. To protect firms who provide data on a confidential basis, these agencies cannot disclose data on individual firms. Operationally, this has translated into a rule that data cannot be disclosed if there are fewer than three employers in a group who employ a particular occupation type in a region, or if a single employer accounts for 80% or more of the employees in a category. For particular industries of interest in Spokane such as software, or computer and electronic equipment, there are only a few employers and if there is a single large one, virtually all of the rows in the staffing data are subject to the exclusion rule. Even for health care services, a relatively large sector in Spokane, data exclusion prevents release of a useful amount of data on staffing patterns. Total employment in the industry and a half dozen or so of the perhaps one hundred occupations used in an industry are revealed; every other occupational category is represented by an exclusion code.

To get around this problem, analysts at ESD prepared health care and high tech staffing analyses to specifications provided by the author. Using the methodology described above, the ESD analysts supplied estimates of the percent of employees requiring on-the-job training, community college or equivalent post-secondary education and training, or university level education for the health care and high tech industries. The ESD analysts also supplied tables showing total employment for high tech manufacturing industries (Computer and Office Equipment, Communications Equipment, Electronic Components and Accessories, Aircraft and Parts, and Instruments) and high tech service industries (Computer Programming, Data Processing, and Other Computer Related Services; Engineering, Architectural, and Surveying Services; and Management Consulting Services). This definition of high tech industries used in this analysis is based on Beyers and Lindahl's (1996) analysis of statewide high tech industries. Industries with at least 10% of their employment in research and development occupations are considered high tech in this analysis. If these industries are present in Spokane County, they are included in the high tech manufacturing and service cluster data presented below.

In the analyses below, the detailed staffing and educational requirements data are summarized in tables that show the percentage of new hires in that cluster of industries at various education, training, or experience levels. These summary tables provide rough guides to the educational implications of the different scenarios, and they clearly show that the future of the Spokane economy is unlike its past, and subject to considerable influence from the development options local leaders pursue. More jobs will require formal post-secondary education and proportionately fewer will be learned through on-the-job training or short customized training courses than has been the case in the past. This finding that more higher education is likely to be needed is a key finding from this alternative scenario analysis. These findings pertain only to educational requirements to enter an occupation; further education needed to stay competitive or move up in an organization is not considered in this methodology so these results show a minimal level of demand that is likely to be exceeded.

The analytically-based development scenarios were enriched through a series of discussions with leaders in the Spokane area, the target industries, and an expert panel of four individuals from other regions of the United States who commented on the draft report during a public meeting in Spokane. These experts have participated in economic development processes in the southeast and midwestern regions of the United States, and they have written extensively about the success of different economic development strategies in academic and practitioner oriented journals. They were exposed to Spokane area development issues through reading a draft of this report, visiting some area businesses during a day-and-a-half tour, and discussing development options with local leaders in the business community. Local residents were then invited to a public meeting. After a briefing on the draft study findings, the expert panel commented on the draft and what they learned from their brief visit. Audience members, including many business, civic, and educational institution leaders from the Spokane area, then considered the input from the experts and provided additional comments through a series of break-out sessions. The discussion below reflects all of these inputs. Notes from the focus groups and the public meeting, including both expert panel and local resident comments, are provided in the Appendix.

The Starting Point - 1995 Employment

The following table shows the estimated educational requirements to enter the jobs that existed in the Spokane area in 1995. Over three quarters of these jobs were accessible to persons with a high school education, combined with on-the-job training or experience in the field. Under 20% required

a university or graduate degree, and less than 5% required the sort of technical education one can obtain at a technical or

Table 6: Educational Requirements to Enter Existing Jobs in Spokane

Education Requirement to Enter Occupation	No. of 1995 Jobs	% of Total
A: First professional degree	2,577	1.35
B: Doctoral degree	651	0.34
C: Master's	1,772	0.93
D: Work experience plus bachelor's or higher degree	12,204	6.39
E: Bachelor's	18,358	9.61
F: Associate degree	8,729	4.57
G: Postsecondary vocational training	10,169	5.32
H: Work experience in related occupation	13,790	7.22
I: Long-term OJT (> 12 mos.)	20,919	10.95
J: Moderate-term OJT (1-12 mos.)	23,438	12.27
K: Short-term OJT (short demo up to 1 mo.)	76,814	40.22
Unclassifiable	1,574	0.82
Total Employment, 1995	190,995	
Jobs requiring university degree	35,562	18.62%
Jobs requiring comm. coll. or similar education	18,898	4.57%
New jobs requiring OJT	134,961	75.99%

community college. This picture of the education and training requirements for Spokane's workforce in 1995 establishes a base against which projections of future jobs, and their educational requirements can be gauged.

Business as Usual – the ESD Forecast

The business as usual scenario is based on the long term Employment Security Department forecast out to the year 2005. Table 7 below shows the education requirements for the added industry employment from 1996 through 2005. The data in Table 7 pertain only to the new jobs added during the 1996-2005 forecast period, not to the pre-existing jobs as of 1995.

Table 7: Education Requirements for Net New Jobs in ESD Long Term Employment Growth Forecast, 1995-2005

Education Requirement to Enter Occupation	No. of Net New Jobs	% of Total
A: First professional degree	261	1.14
B: Doctoral degree	67	0.29
C: Master's	290	1.27
D: Work experience plus bachelor's or higher degree	1378	6.04
E: Bachelor's	3574	15.67
F: Associate degree	1421	6.23
G: Postsecondary vocational training	771	3.38
H: Work experience in related occupation	2055	9.01

I: Long-term OJT (> 12 mos.)	2953	12.95
J: Moderate-term OJT (1-12 mos.)	1314	5.76
K: Short-term OJT (short demo up to 1 mo.)	8545	37.48
Unclassifiable	172	0.75
Total Employment Change, 1995-2005	22801	
New jobs requiring university degree	5570	24.43
New jobs requiring comm. coll. or similar education	2192	9.61
New jobs requiring OJT	14867	65.20

Sources: Occupational Outlook Handbook - ratings of educational requirements; Washington Employment Security Department - employment projections.

In this scenario, nearly two thirds of the added jobs will be accessible by persons with no more than a high school diploma. On-the-job training processes provide all of the additional training required to perform these jobs, some 14,867 of the 22,801 net new jobs in this forecast. Of the other third, nearly a quarter will require a 4-year or graduate university degree, and just under 10% will require a community college 2-year degree or similar education.

Comparing the new jobs in the ESD forecast to the existing jobs in 1995, there is a notable shift in education requirements solely due the shift in the number of workers in each occupation. On-the-job training declines as an entry point from 76 to 65 percent of jobs; a community college or similar degree becomes the entry route for nearly twice as many workers (4.5% of 1995 jobs but 9.6% of new jobs); and university degrees from the bachelor's level on up through all graduate degrees becomes the entry requirement for 24.4% of the new jobs, compared to 18.6% of the 1995 job base. Further increases in education requirements are likely as many existing occupations become more technical, and as new technical occupations are added in certain industries. The changing role of higher education in the workforce is dramatic and rapid.

This scenario provides a floor in terms of higher education demand in the Spokane economy. The WWP forecast, with a substantially higher growth rate, would require more new workers with college degrees, as well as more workers capable of entering jobs through on-the-job training. The alternative scenarios discussed below feature industries with very high education requirements for their workers, and in these scenarios, an even higher proportion of workers will need to complete college programs.

College-trained workers come from one of two sources:
(1) local residents who have successfully completed appropriate programs, or
(2) new emigrants who come into an area, often in response to the staff recruiting efforts of large corporations or just on the reputation of a place as having a lot of job openings and a tight market that suggests good employment prospects and favorable wage trends.

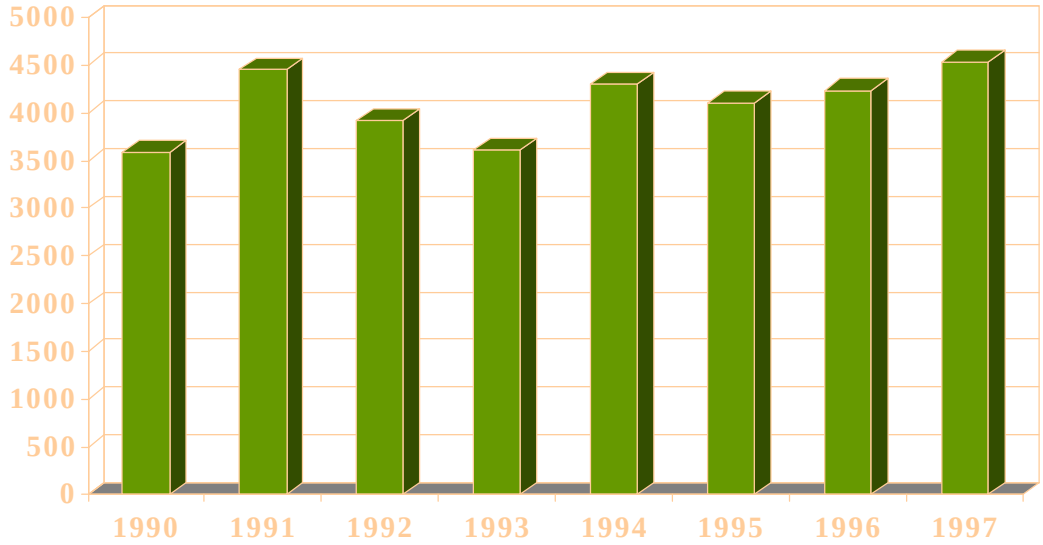
There is no analytical basis for allocating new jobs in these scenarios between new immigrants and local residents. The outcome will depend on the number of seats in appropriate education programs in the Spokane area, as well as the education offerings and industry workforce demand in other regions of North America.

High Tech

The Spokane area has made a definite entry into the high tech arena. The area is the headquarters for several high tech firms including Itron, Johnson-Matthey, Keytronic, Packet Engines, and Telect. In addition, Boeing and Hewlett-Packard have established substantial branch plants in the area. Cyan, the creators of the popular computer game Myst, is one of the larger and probably the most prominent software firms in the area. Avista Advantage, a subsidiary of Washington Water Power, is an example of a high tech busines service company, a category of firms that has been growing rapidly in many regions.

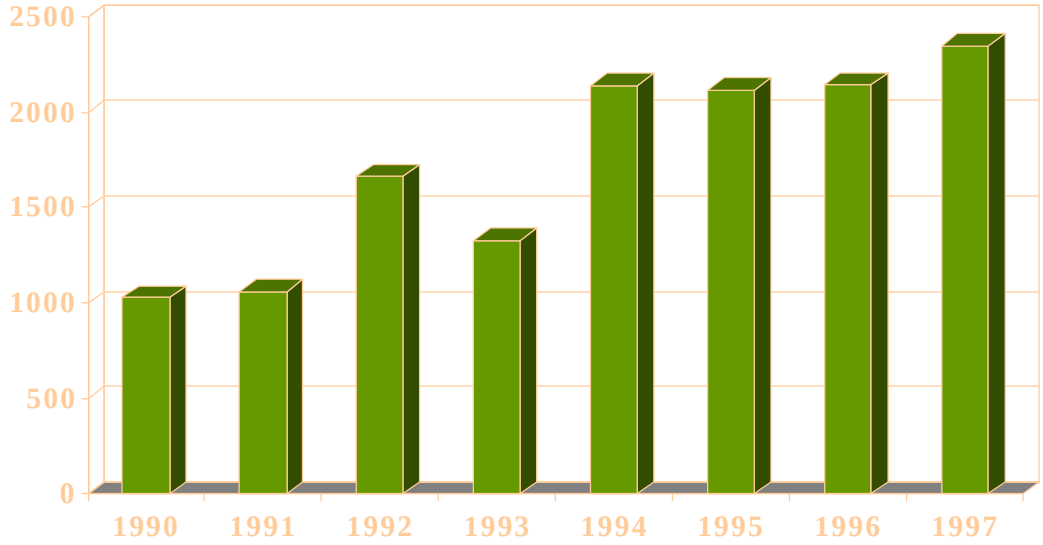
Figures 1 and 2 demonstrate that Spokane County has a substantial and growing high tech presence, both in manufacturing and service industries. However, these figures also demonstrate that growth rates have been uneven, particularly in manufacturing. One explanation for the uneven growth in high tech manufacturing is the influence of low wage competition from areas such as Asia which have led local firms carrying out assembly operations to out-source these tasks to foreign partners, thereby cutting back

Figure 1: Employment in High Tech Manufacturing[1] in Spokane County



Source: Washington Employment Security Department

Figure 2: Employment in High Tech Services[2] in Spokane County



Source: Washington Employment Security Department

[1] Employment in the following sectors included: Computer and Office Equipment, Communications Equipment, Electronic Components and Accessories, Aircraft and Parts, and Instruments

[2] Employment in following sectors included: Computer Programming, Data Processing, and Other Computer Related Services; Engineering, Architectural, and Surveying Services; and Management Consulting Services

local employment in relatively low skill assembly operations. Decisions such as these have led to more than one round of cutbacks at Keytronic and Itron, two of the larger electronics assemblers in the Spokane area.

In addition to the high tech industries per se, the Spokane area has several other institutional assets that facilitate the growth of high tech industries. On the Riverpoint campus adjacent to downtown Spokane, higher education services can be delivered by Washington State and Eastern Washington Universities. EWU also provides engineering technology and computer science programs on its Cheney campus, and business programs at a facility in downtown Spokane. In addition, the Spokane Intercollegiate Research and Technology Institute (SIRTI), is a research facility with additional programs in commercialization and small business assistance. Several area businesses have conducted research and development programs in collaboration with SIRTI, and a computer engineering laboratory is a current, growing program. SIRTI may prove to be a major asset in building a strong advanced technology presence in the Spokane area. The research and technical assistance capacity of SIRTI is complemented by nearby universities. Washington State University has a major engineering program that provides assistance to Spokane firms in a variety of ways, including research funded in partnerships between public and private organizations. The University of Idaho is developing a presence in the Post Falls area, just across the Idaho border; this "branch campus" will be able to offer additional engineering education and technical assistance to Spokane area firms. In the downtown Spokane area, the "Terabyte Triangle" provides state-of-the-art fiber optic cable access to a number of buildings, providing space for companies needing high speed, broad bandwidth telecommunications. East of Spokane, the Liberty Lake area and industrial areas across the Idaho border near Post Falls provide space for the development of high tech plant facilities with access to the workforce in both Spokane and northern Idaho. Not surprisingly, the Strategic Alliance (1997) report on development potential for Spokane recommends a strong focus on high tech manufacturing.

Spokane's quality of life is a major asset in developing the high tech industries. Many of the founders of the existing high tech firms are entrepreneurs with significant business experience in other areas such as Silicon Valley. They have returned to Spokane with a strong desire to live again in an area that is smaller, less congested, and lest costly. To build their companies, they often rely on recruiting key staff such as software developers and senior engineers from other regions of the country. The outdoor-oriented, smaller town atmosphere of Spokane is a major quality of life advantage these entrepreneurs use to recruit key staff members. Another factor in the area's quality of life is the availability of higher education programs. Spokane is home to two community colleges, and two private universities. The Cheney campus of Eastern Washington University makes undergraduate programs and selected graduate programs relatively accessible to the area population. The nursing center in Spokane significantly augments offerings in health care professions. The programs offered by Eastern and Washington State downtown and at Riverpoint further enrich the accessibility of selected business and technical programs, as does the new Riverbend operation of the University of Idaho at Post Falls, Idaho. While area employers have some concerns about advanced engineering and other technical course offerings, the current level of higher education programs is an attractive feature of the area that aids in attracting new people to Spokane.

However, the smaller urban area attributes that are an aid in attracting entrepreneurs can also be a hindrance in attracting key staff who worry that a first job in Spokane might not work out well, leaving them stranded with limited options for subsequent employment. The high tech sectors in the Spokane area probably need to double in size before this concern will be significantly alleviated. Positive agglomeration effects might then begin to reinforce high tech development in other ways at

that point, as ideas, people, and money begin to re-circulate in the area, leading to the formation of new companies and reinforcing growth of existing ones. Now, unfortunately, a resource such as labor released by one company is likely to leave the area, causing a slippage of the development of this industry cluster until the next successful startup emerges. Layoffs at companies such as Keytronic and Itron have had this type of impact in the recent past. Limits on higher education offerings due to the size of the local market may be another inhibiting factor stemming from the current size of the metropolitan area and the market for educational services that population size establishes.

It is not clear whether the quality of life attributes offered by Spokane can successfully offset the negative impacts of small size, allowing Spokane to attain a level of positive agglomeration economies that would make the region a successful high tech node in the national economy. One of the expert panel members who participated in this review expressed skepticism that Spokane would ever achieve this status, and another warned that the lack of a major research university presence in Spokane is a stumbling block. On the other hand, the existing high tech companies account for a sizeable portion of area employment, and many of them are growing. A relatively small number of additional successes, events such as Packet Engines reaching profitability and preparing an initial public offering, or a major corporation deciding to put a branch plant in the area, could propel the Spokane area forward as a second tier high tech center, not a Seattle or Austin, but a medium sized city known for a substantial and growing high tech cluster. In the Northwest region, Boise has attained such a reputation, and the Treasure Valley area has enjoyed significant increases in employment and affluence as a result of the growth of employment at Hewlett-Packard, Micron, and Zilog, three large companies with plants in the Boise area.

Beyers and Lindahl (1996) define high tech industries as industries with at least 10% of their employment in research and development related occupations. Statewide, these industries include:

- Aerospace
- Computers and electronic machinery
- Machinery & motor vehicles
- Chemicals & petroleum
- Specialized instruments & devices
- Biomedical/biochemical manufacturing
- Engineering, research and management consulting services
- Software and other computer services

Most of the leading high tech firms in the Spokane area fall in the computers and electronic equipment industry; the Boeing plant brings in the aerospace sector, and some engineering and software firms are located in the region as well. SIRTI is the most prominent research organization. However, none of these sectors is very large at present.

For this set of industries to have a substantial impact on the overall regional economy, some of the existing firms would have to grow rapidly in the future and new firms would need to set up shop in the area as well. Rapid growth could come from the successful recruitment of major branch plants in fields such as aerospace or machinery & motor vehicles. On the other hand, existing software or computer & electronics companies could grow rapidly in the future, resulting in favorable agglomeration effects that would lead to further growth. A third possible growth path would stem from the crowded conditions faced by companies in the Puget Sound, Portland, Silicon Valley, and Southern California. In all of these areas, competition for industrial land and labor is intense, leading to constraints on the growth of firms and rising costs. Many firms are likely to consider alternative

locations for expansion or wholesale relocation. For example, as biotechnology firms move products out of the laboratory and into production, it is possible that firms with a research and technology base in the Puget Sound could decide to build their manufacturing and distribution plants in the Spokane area. Software or advanced technology manufacturing companies could either move entirely from one of these crowded metropolitan areas to Spokane as they out-grow current facilities, or they could set up branch plants in the Spokane area. Finally, SIRTI could become the key to future growth though its technology spin-off activities. Several companies have been launched to commercialize technologies SIRTI has identified as promising. These companies, or new ones built around future SIRTI projects, could become substantial sources of growth in the Spokane area. Import substitution offers another strategy for Spokane area growth. A number of local high tech companies are purchasing inputs from outside the area; it may be possible to start local firms to supply these needs.

Developments of the scale imagined do not happen overnight, but over a 20-30 year period, very substantial development is possible. Examination of the Puget Sound or Silicon Valley 20-30 years back versus their present condition shows the potential for high tech based growth, as does the development of individual companies such as Packet Engines or Telect in the Spokane area.

Individual company growth stories from the Puget Sound reinforce the point:

- Amazon.com, an on-line book store, has grown from one employee to over 1000 since 1995;
- Icat, an electronic commerce software company, grew from 12 to 150 employees in 18 months; and
- Real Networks, a provider of streaming audio software products, grew from 10 to 300 employees in about 24 months (Waddell, 1998).

These company records from Puget Sound based software companies show the kind of growth that is possible in high tech, growth that is bringing 4,000 to 6,000 new employees into the software industry in the State of Washington each year. If Spokane can attract software or other high tech entrepreneurs, this kind of dramatic growth could transform the high tech industry cluster in Spokane within a decade.

For high tech development to blossom in a way that solves the region's major income problems, higher wage firms using advanced technology would have to grow more rapidly than low-wage electronics assembly firms. The region would have to attract or grow firms with strong research and development programs, and ones that tend to pay higher than average wages due to the high value added products they produce. Boeing is an example that meets both criteria. Software development firms are another possibility. Biotechnology product manufacturing may meet these criteria as well. In all of these types of firms, a high percentage of the workforce is technically trained, a demand that community colleges and undergraduate and graduate higher education institutions would need to fill.

Table 8 shows the estimated education requirements for the current set of high tech companies operating in Spokane County. Less than half of the jobs in this industry cluster are accessed through on-the-job training after high school; the majority of high tech jobs require either a community college degree or more advanced university level training.

Table 8: Higher Education Requirements of High Tech Industries in Spokane

Education Requirement to Enter Occupation	1996 Jobs	% of Jobs
• 4-yr. or graduate university degree	742	38.3%
• Community college or similar	2,673	13.4%

• On-the-job training	5,531	48.3%

Sources: Occupational Outlook Handbook - ratings of educational requirements; Washington Employment Security Department - employment projections.

The long term ESD forecast shows the high tech industries growing at 1.67% annually, somewhat slower than regional employment overall. This is a very conservative forecast given the growth potential of some of the newer companies in both the manufacturing and service sectors. If this sector's growth rate increased by 1% over the forecasted rate, it would create another 1,600 total new jobs, of which over 830 would require some degree of college education. Even that level of growth seems conservative; 2.7% growth is less than forecasted growth in health services, and the health service sectors, as discussed below, face a number of threats as well as opportunities for gradual expansion. High tech development based on exploitation of new intellectual property can lead to very rapid growth, as demonstrated in the discussion above. Just how fast the growth rate could be is a matter of speculation and the development path taken.

Health Services

Health services is a leading industry in Spokane. Hospitals, clinics, nursing and convalescent homes are large and growing sources of employment in the county. With two large hospital systems – Providence and Sacred Heart – offering many specialties, Spokane is a regional treatment center supporting individual practitioners and smaller hospitals in the Inland Northwest region. A cardiology center handles many heart related problems. An oncology center is being planned. St. Lukes Hospital provides rehabilitation services. An extensive network of general and specialist practitioners and clinics augments care provided at hospital facilities. This cluster of health care service industries serves local residents, as well as providing tertiary care for people in a wide region in the Northwest, including eastern Washington, northern Idaho, parts of western Montana, and even Canadian patients seeking faster treatment than is available through public health services in Alberta and British Columbia. According to the head of one of the hospital systems, unless a case is presented with severe burns or very rare childhood diseases, the highest standard of care is available in Spokane.

This cluster of industries is also supported by an inter-collegiate nursing education program operated by Washington State University at a facility in Spokane and by programs at Eastern Washington University. In addition, local community colleges train personnel for many health care occupations.

Discussions about the factors affecting growth of this cluster of industries reveal many anxieties about the future as well as hopes for expanding and deepening the range of services provided. New for-profit care providers and attempts to control cost escalation by insurers are threats to expansion. Growing capacity across the border in Coeur d'Alene, Idaho may stem the flow of referrals from areas east of Spokane. The image of the providers in Spokane is also problematic, with some primary care givers in outlying areas, and sophisticated consumers in Spokane, many of whom work in health care, choosing to go to Seattle, Salt Lake, or Denver for specialist services and acute care procedures. Offsetting these threats, the existing cardiology center and a planned oncology center are expanding the range of services available in Spokane and enhancing the area's reputation among referring physicians. On-going research programs offer another image enhancement opportunity; physicians hearing of "the Spokane study" on some topic in a prestigious journal may become more

likely to refer cases to specialists and hospitals in Spokane. New initiatives in multi-disciplinary education may bring in additional students, including foreign students who add substantial income to a local economy.

This industry cluster demands a high proportion of college educated staff (Table 9). Only 44% of total employment in these industries are in jobs accessible through on-the-job training. Over a third require a community college degree or similar education, and nearly 17% require a 4-year or graduate university degree. It is intriguing to compare this pattern with the net new jobs in the base case. More community college degrees and fewer university degrees are required in the cluster distinguished by its "doctors."

Table 9: Higher Education Requirements of the Health Care Industry Cluster

	No. of Net	
Education Requirement to Enter Occupation	New Jobs	% of Total
A: First professional degree (incl. M.D.)	727	4.57
B: Doctoral degree (Ph.D.)	1	0.01
C: Master's	202	1.27
D: Work experience plus bachelor's or higher degree	861	5.42
E: Bachelor's	892	5.61
F: Associate degree	3983	25.06
G: Postsecondary vocational training	1609	10.12
H: Work experience in related occupation	596	3.75
I: Long-term OJT (> 12 mos.)	873	5.49
J: Moderate-term OJT (1-12 mos.)	1105	6.95
K: Short-term OJT (short demo up to 1 mo.)	4494	28.27
Unclassifiable	553	3.48
Total Employment Change, 1995-2005	15896	
New jobs requiring university degree	2683	16.88
New jobs requiring comm. coll. or similar education	5592	35.18
New jobs requiring OJT	7068	44.46

Sources: Occupational Outlook Handbook - ratings of educational requirements; Washington Employment Security Department - employment projections.

It is possible for this cluster to grow more rapidly than forecasted by ESD or WWP. These forecasts show health services growing about 3% annually, about 1 to 1.25% faster than the economy overall. Faster growth could come via several mechanisms:

- an improved image for the industry resulting in more referrals from the surrounding area;
- expanded multi-disciplinary education programs that would attract more students and eventually more patients;
- siting a major medical research facility in the area;
- attracting more medical equipment manufacturing into the area.

If this sector's growth rate increased by 1% over the existing forecasts, it would create another 1,600 total new jobs, of which over 830 would require some degree of college education. The discussion above also suggests that a slower rate of expansion is possible. Underlying population growth, and

gradual aging of that population suggest that 1-2 percent expansion is likely even if referrals from outlying areas fail to increase. The population trends establish a floor of around 2% for the likely growth rate of health care services in Spokane. Just how high the growth rate could be is a matter of speculation and the development path taken by decision-makers in Spokane and neighboring areas.

Summary of Higher Education Implications of Scenarios

The alternative scenarios for Spokane's future considered here demonstrate a substantial demand for college-educated personnel to support economic development. Anywhere from 33 to 45 percent of new workers will require at least some college education, ranging from a community college 2-year degree to a 4-year or graduate university degree depending on the occupation. In contrast, three-quarters of the existing workforce in Spokane could have entered their jobs with no formal education beyond a high school diploma. Other studies suggest that continuing education will be required to stay current in a field or to change occupations during a career, and that lifetime earnings are highly correlated with higher levels of educational attainment. Whatever the future holds, more emphasis on higher education is likely to be required to support the staffing needs of firms operating in the Spokane area. Either local higher education services will need to expand, or firms will increasingly find it necessary to recruit staff from other regions.

Health care, and high tech manufacturing and services are identified as major growth sectors for the future. The Spokane area's favorable quality of life, available workforce, and space to support expanding firms are major advantages in supporting development of these sectors. A number of institutions support development of these sectors, including educational institutions, research organizations, industry associations, and general business leadership. Overall, physical infrastructure is favorable, with continuing investments supporting further development. However, both of these industry clusters are facing some significant challenges to further growth. In health care, the reputation of the area, cost control initiatives, and competition from other tertiary care centers are issues that need to be faced. In high tech, periodic slippage of low skill employment at some existing companies and a current size that limits agglomeration effects are hurdles to overcome. Competition is fierce in the product markets these firms serve, as well as competition among cities for the opportunity to host companies of this type. Substantial growth of these two clusters is not guaranteed; wise community leadership, support from the state, and successful entrepreneurship will all be required.

One factor clearly limiting the development of health care and high tech in the Spokane area is the availability of higher education services. In health care, the range of professions that can be trained locally is limited by the lack of a medical school and research institutions. In high tech, the need for advanced engineering education and technical support services from research universities is paramount. State and local decision makers need to find ways to meet these needs within the constraints imposed by community and industry size, and the state's fiscal constraints and competing needs of other regions in the state.

The health service and high tech scenarios highlight the key role of community colleges, institutions that support a wide array of technical education programs leading to a two year associate degree. Occupations entered through such programs are important in health care, and increasingly important in advanced technology manufacturing and other fields. The quality of this component of higher education may be as critical to a region's future as the production of 4-year and graduate degrees. However, the total requirement for 4-year and advanced degrees remains larger than the need for 2-year degrees.

Spokane also has an increasingly important role to play in overall development of the state economy. Crowded conditions in several metropolitan regions in the West suggest opportunities to provide the space and facilities for expansion of companies based in western Washington. Higher education has a key role to play in creating a stronger, larger, and higher wage economy in the Spokane area. To achieve a better balanced economic situation, Spokane must emerge as a major center for higher education and thereby as a center for industries requiring a significant number of employees with baccalaureate and graduate degrees. Higher education must also find creative ways to support dynamic industries such as software, telecommunications equipment and services, and electronic equipment through technical assistance and research programs, and cost effective, flexibly delivered upgrade training opportunities. With the base provided by several public and private universities operating in and near Spokane, the informal "capitol" of the Inland Empire can host many more high tech manufacturers, software and other business service firms, and health care providers in a vibrant inland metropolitan region.

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